THIRD SERIES VOL 57 NUMBER 8 JUNE 1950

THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

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Annual Election Results

Report to the Chairman of the General Meeting, 20 June 1950

The Scrutineers appointed to count the votes for the election of the Council for the Session 1950-51 *beg to report as follows:*

3,515 *envelopes were received—*752 *from Fellows,* 2,103 *from Associates, and* 660 *from Licentiates.*

The result of the election is as follows:

COUNCIL, 1950-51

President:

ANDREW GRAHAM HENDERSON (Glasgow) (unopposed)

Past-Presidents:

SIR LANCELOT HERMAN KEAY (Walton-on-the-Hill) (unopposed)

MICHAEL THEODORE WATERHOUSE (unopposed)

Members of Council:

Elected		*Votes*
1.	GEORGE GREY WORNUM	2,133
2.	FREDERICK GIBBERD	1,944
3.	ANTHONY MERLOTT CHITTY	1,384
4.	CECIL GEORGE STILLMAN	1,361
5.	DENIS CLARKE HALL	1,120
6.	VICTOR BAIN	929

Not Elected		*Votes*
7.	STEPHEN ROWLAND PIERCE	881
8.	MARTIN SHAW BRIGGS	830
9.	HAROLD ALFRED DOD	783
10.	LEONARD HOLCOMBE BUCKNELL	753
11.	JOHN LEOPOLD DENMAN	726
12.	HAROLD CONOLLY	703
13.	JOHN SWARBRICK	669
14.	THOMAS NELSON CARTWRIGHT	600
15.	THOMAS MacKELVIE ALEXANDER	557
16.	JOHN RALPH EDWARDS	556
17.	CLIFFORD EWART CULPIN	540
18.	JOHN BURGESS SURMAN	508
19.	ALFRED HERBERT GARDNER	497
20.	ALBERT EDGAR EBERLIN	395
21.	PETER JOHN BLUNDELL HARLAND	256
22.	CECIL KENNARD	255
23.	ALWYN BRUNOW WATERS	220
24.	CYRIL DOUGLAS ANDREWS	167

3,480 Voting Papers were received, of which 1 was invalid.

Associate Members of Council:

Elected		*Votes*
1.	HON. LIONEL GORDON BALIOL BRETT	1,603
2.	PETER FAULKNER SHEPHEARD	1,095
3.	ROBERT HOGG MATTHEW	1,024

Not Elected		*Votes*
4.	HENRY THOMAS CADBURY-BROWN	953
5.	JOHN LEWIS WOMERSLEY	672
6.	CHARLES STANBURY MADELEY	654
7.	WILLIAM ALEXANDER ALLEN	637
8.	RICHARD ROBERT FAIRBAIRN	467
9.	STIRRAT ANDREW WILLIAM JOHNSON-MARSHALL	431
10.	HAROLD BRUCE ALLSOPP	410
11.	GRACE MARGARET WHITAKER (Mrs.)	370
12.	WALTER BARRETT	328
13.	CHARLES ROY FOWKES	247
14.	GEORGE FREDERICK WHITBY	187
15.	SYDNEY WEBSTER	166

3,393 Voting Papers were received, of which 3 were invalid.

Licentiate Member of Council:

Elected		*Votes*
1.	SIDNEY LUNN WHITEHOUSE	1,108

Not Elected		*Votes*
2.	JOHN CLAY	904
3.	JOHN CAMPBELL HALL	606

2,622 Voting Papers were received, of which 4 were invalid.

Representatives of Allied Societies in the United Kingdom or the Irish Free State

(1) *Six Representatives from the Northern Province of England*

PHILIP CLIVE NEWCOMBE (Northern Architectural Association)

FRANKLYN LESLIE HALLIDAY (Manchester Society of Architects)

FREDERICK CHARLES SAXON (Liverpool Architectural Society)

ALBERT NEWTON THORPE (York and East Yorkshire Architectural Society)
CHARLES EDWARD HORSFALL (West Yorkshire Society of Architects)
ROBERT CAWKWELL (Sheffield, South Yorkshire and District Society of Architects and Surveyors)

(2) *Five Representatives from the Midland Province of England*
GEORGE BERNARD COX (Birmingham and Five Counties Architectural Association)
TOM WILLIAM HAIRD (Leicester and Leicestershire Society of Architects)
WALTER ROSSER (Northamptonshire, Bedfordshire and Huntingdonshire Association of Architects)
CYRIL FRANCIS WILLIAM HASELDINE (Nottingham, Derby and Lincoln Architectural Society)
STANLEY JOHN WEARING (East Anglian Society of Architects)

(3) *Six Representatives from the Southern Province of England*
HUBERT JAMES HAMMICK (Devon and Cornwall Architectural Society)
REGINALD SEYMOUR REDWOOD (Wessex Society of Architects)
TARRAS TALFOURD CUMMING (Berks, Bucks and Oxon Architectural Association)
HAROLD SELWOOD SAWYER (Hampshire and Isle of Wight Architectural Association)
DAVID A. WILKIE (Essex, Cambridge and Hertfordshire Society of Architects)
CECIL LEONARD BURNS (South-Eastern Society of Architects)

(4) *Four Representatives of Allied Societies in Scotland nominated by the Council of the Royal Incorporation of Architects in Scotland*
THOMAS SMITH CORDINER (Glasgow)
LIEUT.-COL. ALEXANDER CULLEN (Inverness)
LESLIE GRAHAME-THOMSON (Edinburgh)
LOCKHART WHITEFORD HUTSON (Hamilton)

(5) *One Representative of Allied Societies in Wales*
EDWIN SMITH (South Wales Institute of Architects)

(6) *Two Representatives of Allied Societies in Ireland*
FRANCIS McARDLE (Royal Institute of the Architects of Ireland)
ROBERT HANNA GIBSON (Royal Society of Ulster Architects)

Representatives of Societies in Alliance with the Royal Institute Overseas
To be nominated by the Councils of each of the following:
The Royal Architectural Institute of Canada
The Royal Australian Institute of Architects
The New Zealand Institute of Architects
The Institute of South African Architects
The Indian Institute of Architects.

Representative of the Architectural Association (London)
SIDNEY EDWARD THOMAS CUSDIN

Representative of the Association of Architects, Surveyors and Technical Assistants (now the Association of Building Technicians)
KENNETH JOHN CAMPBELL

Chairman of the Board of Architectural Education
KENNETH MERVYN BASKERVILLE CROSS

Chairman of the R.I.B.A. Registration Committee
LIEUT.-COL. VIVIEN HOME SEYMER

Two Representatives of the R.I.B.A. Salaried and Official Architects' Committee
(To be appointed)

Chairman of the R.I.B.A. Allied Societies' Conference
NORVAL ROWALLAN PAXTON (Leeds)

Election of Two Honorary Auditors
BRIAN PEAKE, *Fellow* (unopposed)
CHARLES SYKES, *Associate* (unopposed)

Scrutineers

ERNEST G. ALLEN, *Chairman*	J. S. FOSTER
C. J. EPRIL	R. W. HURST
G. H. FIELDER	N. A. ROYCE
M. A. J. FAREY	NORMAN RIX
CHARLES SYKES	HOWARD L. KELLY
E. D. LYONS	RICHARD BETHAM
W. NORMAN WORRALL	ROY PENNISON
JAMES C. KENNEDY	L. A. BUTTERFIELD
F. L. HYETT	E. TOM SARGENT
JOHN A. WHITTAKER	ARTHUR J. NORCLIFFE

15 June 1950

Birthday Honours

Members will wish to join with us in offering congratulations to those eminent in architecture, town planning and building whose names appear in the King's birthday honours list. They are: *Barons*: Sir Cyril Hurcomb, Chairman of the British Transport Commission; The Right Hon. Lewis Silkin. *Knight Bachelor:* Harold Nevil Smart, President of the Law Society and Chairman of the Discipline Committee of A.R.C.U.K. *C.B.:* Major General L. D. Grand, Director of Fortifications and Works. *C.B.E.:* W. H. Godfrey [*F*], Director of the National Buildings Record; T. E. Scott [*F*], Chairman of the Architecture and Public Utilities Committee of the Technical and Scientific Research Advisory Council, Ministry of Labour. *O.B.E.:* Brian Bell [*F*]; Miss J. H. E. Macpherson, Secretary of the Artists' General Benevolent Institution; W. T. Porteous, contractor and member of the Working Party of the Building Industry. T. Smith Shearer [*F*]. *M.B.E.:* C. Terry Pledge [*A*]; S. R. Gerdes, General Secretary of the Southern Counties Federation of Building Trades Employers.

R.I.B.A. Standard Form of Contract

A survey recently carried out by the National Federation of Building Trades Employers among local authorities shows that by far the greater proportion of them are using the R.I.B.A. Standard Form of Contract. In view of the recommendation of the Working Party that the standard form, without variations, should be used and the statement by the Minister of Health in the House of Commons, on 11 May, that he was circularizing local authorities calling attention to the need to use the standard form, the figures which resulted from the N.F.B.T.E. survey are of considerable interest.

All local authorities in England and Wales were circularized. Of the 1,531 authorities so circularized 1,278 replies were received, that is 83.4 per cent. Of these 1,278 replies, 1,178 local authorities, that is to say 92.2 per cent, signified that they were using the R.I.B.A. form. Even were it to be assumed that those local authorities which have not completed the form were not using the contract, the return would still show that 77 per cent of all local authorities in England and Wales have adopted the standard form.

The Two Months' Starting Condition on Building Licences

The Ministry of Works have informed the Royal Institute of British Architects that the condition requiring work to be started within two months from the issue of a building licence will be deleted from future licences. If in exceptional cases owing, for example, to labour shortage it is necessary to make a condition that work should be started by a certain time, the condition will be inserted on the merits of the case. The previous automatic rule has been abandoned to meet the representations that it hampered proper planning of building work, and in view of the emphasis placed upon adequate planning in the reports of both the Building Working Party and the Productivity Team following its visit to the United States.

The Bristol Conference

Two fascinating cities set in a lovely countryside, the centenary of the Bristol Society of Architects, excellent papers and speeches, first class organization, perfect weather and a membership only 10 less than the Liverpool record, together made a most memorable and successful conference. It began with the Bristol Society welcoming their guests at the Red Lodge, a 16th and 17th century building, which is the property of the Corporation and the home of the Bristol Savages. The Lord Mayor was present; Mr. R. S. Redwood, the Bristol Society President, made a brief speech of welcome from the gallery of the 'wigwam'; the Savages put on a 'floor show'; the members crowded the many rooms and altogether the conference got away to a good start. At the inaugural meeting next morning, held in the late Sir George Oatley's fine physics lecture theatre at the University, the Lord Mayor officially welcomed the Conference, the President delivered his inaugural address and the Earl of Rosse lectured on *The Protection and Preservation of Historic Buildings*. Lord Rosse made no narrow 'preserve at any price' plea but presented a balanced statement of the problem which clearly won the approval of his architect audience.

After the garden party at Blaise Castle, at which the hosts were the Corporation of Bristol, the conference members were welcomed at the Pump Room in Bath by the Mayor of Bath, Miss Councillor Kathleen Harper and the Mayoress. The building, from its Roman baths to its lovely 18th century pump room, is a perfect setting for an official reception and the sight of architects and their ladies enjoying refreshments amid flower-decked and floodlit Roman remains beneath 19th century glazed-brick vaulting, remains in the memory as slightly surrealist but none the less most enjoyable. On view was the exhibition of 100 years of Wessex architecture.

In spite of the attractions of all-day tours most conference members, on the Friday morning, heard the Hon. Lionel Brett [*A*] deliver his paper *The New City Centres of Europe*. This received from members much the same degree of appreciation as had been given to Lord Rosse's paper. The afternoon was devoted to visits to buildings in and around Bristol and Bath, ranging in interest from Prior Park to the Brabazon hangar. The conference dinner in Bristol was a most enjoyable function, specially noteworthy for the excellence of the speeches, even though Mr. Graham Henderson had to stand silent while the great bell of the University, less than a hundred yards away, slowly and ponderously tolled ten. On the Saturday morning there were more visits to buildings and in the evening a visit by about 100 members to the 18th century Theatre Royal where the Bristol Old Vic Company gave an outstanding performance of Molière's *Tartuffe*. After the performance Mr. Ralph Edwards [*F*] gave a brief account of the theatre's history and conducted the party over the stage portion of the building.

As all this implies, the Bristol Society had spent many months preparing for their role of host and their industry was apparent in the organization generally. It is no easy matter to conduct a conference with its late and early functions divided between two cities some miles apart and, because some conference members were housed in Bath and some in Bristol, to operate an efficient shuttle service of motor coaches at various times of the day and night. Among the many workers that ought to be mentioned, we must not omit reference to the great part played by the President of the Bristol Society, Mr. R. S. Redwood [*A*], to whose long and detailed labours much of the credit is due and to Mr. A. H. Clarke [*A*], Honorary Secretary of the Society, whose efforts were ably and charmingly seconded by Miss Pauline Murphy.

No small contribution to the success of the Conference was that of the School of Architecture. Everyone from the Principal of the School, Mr. G. D. Gordon Hake, to the first year student who acted as barman in the original and amusing students' club (created by the students themselves in the cellars of the school) seems to have taken an active part in the organization. The School had also mounted a most interesting exhibition of students' work.

The late Sir George Oatley

With the death of Sir George Oatley on 17 May at the age of 87, a great figure has passed from the West of England architectural world. As Mr. Lance Wright pointed out in his recent article on the Bristol Society of Architects, George Herbert Oatley in 1889 became the partner of Henry Crisp, who joined the Society in 1851, so that the firm spanned the whole life of the Society. Always enjoying a very large practice, Sir George, more than any other architect, has left his mark on the city of Bristol. Many of the principal University buildings were designed by him, and whatever may now be thought of collegiate Gothic, his work was always scholarly, finely proportioned, sincere and worthy of a great city. A full obituary notice is published on page 330 of this JOURNAL.

The Code of Professional Conduct

Enclosed in this JOURNAL is a copy of the new Code of Professional Conduct, published by order of the Council. The principal changes are the bringing of students within the scope of the Code, the strengthening of the clause relating to directorships of and connection with commercial firms and a general rearrangement of the clauses of the Code.

Frank Lloyd Wright at the R.I.B.A.

Mr. Frank Lloyd Wright, Royal Gold Medallist, is visiting this country in July and will be entertained at lunch by the President and the Executive Committee on 11 July. Mr. Frank Lloyd Wright will also present the prizes at the Architectural Association School of Architecture on 14 July. Admission to the prizegiving will be only by invitation of the A.A. Council.

The American Mission

The Minister of Works, the Rt. Hon. R. R. Stokes, P.C., M.P., presided at the very fully attended public meeting at the Kingsway Hall, on 9 June, to discuss the report of the Building Industry's Productivity Team that went to America last July. Also on the platform were members of the team, and Mr. R. Coppock (General Secretary, N.F.B.T.O.), and Mr. R. R. Costain (President, L.M.B.A.). The Hon. W. John Kenney (Minister in charge of the E.C.A.M. to the U.K.) was unable to be present, but Mr. Abbot L. Moffat deputized for him, and his presence was acclaimed by the audience.

In presenting the report for discussion the Minister said our objective must be to get production up and costs down, and a greater use of incentive schemes would be welcomed. He reminded the audience that full employment carried obligations with it. Mr. Moffat congratulated the team on their work. After Mr. R. O. Lloyd had spoken on behalf of the Management Group; Mr. Robert H. Matthew [*A*] for the Professional Group, and Mr. F. W. Beazley for the Operatives' Group, the Minister invited Mr. Coppock to open the discussion. He was followed by 12 members of the audience.

Following the Kingsway Hall meeting, similar meetings are being held in provincial cities. The speakers are members of the mission and the President, Mr. Michael Waterhouse, or Mr. Robert H. Matthew, Architect to the L.C.C., will speak at most of them.

The British Architects' Conference, Bristol and Bath, 1950

The Inaugural Meeting

Held at the University Physics Lecture Theatre, Royal Fort, Bristol, 8 June 1950

The Lord Mayor of Bristol: Mr. President, My Lord, ladies and gentlemen. I do very cordially extend to you this morning a welcome on behalf of the whole of the citizens of Bristol. We are pleased your very important organization is holding its conference in our city and we sincerely hope that during the time you are here you will very much enjoy your visit and that during the short time at your disposal you will come to love some of the features of our dear old city which are revered by all of us who live in Bristol. I give you my very best wishes for a successful conference coupled with the hope that when the work of the conference is over you will have an opportunity of seeing some of the city's beauties and that when you go to our sister city of Bath you will enjoy seeing the fine architecture in that city. I hope you have a highly successful conference and that it may not be too long before you come to Bristol once again.

The President, R.I.B.A.: My Lord Mayor, My Lord, Ladies and Gentlemen.—It is my pleasant duty, my Lord Mayor, to thank you for your presence here this morning and for the very cordial welcome which you have given to the members of this Conference in the name of the City and County of Bristol. We regard it as a very great honour that you, my Lord Mayor, have found time from your manifold duties to be with us at this meeting.

I should be glad, my Lord Mayor, if you would accept for yourself, and convey to the members of your Corporation, our grateful thanks for the generous hospitality which you are showing to the members of this Conference. We are particularly looking forward to the garden party this afternoon in the pleasant surroundings of Blaise Castle, and we are, indeed, indebted to the Mayor and Corporation of Bath for the pleasure which they are going to give us this evening by having us as their guests at the Civic Reception and Dance in the delightful atmosphere of the Pump Room, which possibly some of our members may be seeing for the first time.

I must then say, as President, on behalf of the Council of the Royal Institute, how much we owe to the President and members of the Bristol Society of Architects, whose guests we are at this Conference. We had a very pleasant start to our Conference at the informal Reception at the Red Lodge last night as the guests of the Bristol Society, and we are looking forward to all the other functions which they have arranged for our entertainment and instruction. May I refer particularly to the hard work of the members of the Conference Executive Committee, and those who are helping us by acting as guides for various tours which members will enjoy.

It may well be that there are some who are making their first visit to this delightful part of England, and I can well imagine that those who are going to take part in the tours tomorrow had difficulty in making up their minds whether to see for themselves the marvels of the Mendips or the charms of the Cotswolds.

Before I leave the Bristol Society may I say a special word of thanks to your hard-working Honorary Secretary and your Secretary, Mr. Clarke and Miss Murphy. I will not attempt to refer in detail to all those who are helping us, but I think I should make particular mention of the hospitality which Mr. Tew is going to offer this afternoon to those who take part in the Bath tour, and express our thanks to Mr. Eric Ross, who is arranging the visit to the world-famous Brabazon hangar.

This is not the first time that we have had one of our Conferences at Bath or Bristol—one of our earliest Annual Conferences was in 1928, when we had the pleasure of meeting in Bath, and it was only a year or two before the war that we had Bristol as our centre.

I do not propose to take up very much more of your time as I am the indigestible part of the sandwich between the Lord Mayor's address of welcome and the lecture which we are waiting to hear from the Earl of Rosse. This is not an occasion on which to talk about the report of the Working Party and that of the team sent over by the Anglo-American Productivity Council to study building methods in America. We at the Royal Institute shall study both these reports very carefully as we know that there are some useful lessons for architects. Meetings are being held all over the country to discuss the report of the American mission, and I myself shall be taking part in many of them, including all those to be held in Scotland. Unfortunately, I can not be present at the meeting to be held in Bristol on Friday 30 June, but I do hope that members of the Bristol Society of Architects and all those interested in the building industry will make a special effort to be present at that meeting. My visit to America with the members of the team formed one of the most strenuous periods of my two-year term of office as President; this will come to an end on 30 June, and so this is almost my 'swan song'. These two strenuous years have been filled with much happiness derived chiefly from the genuine kindliness, friendship and welcome given so generously to my wife and myself wherever we have been.

I wish to take this opportunity of expressing our heart-felt gratitude to all our friends; and, above all, to pay tribute to my own wife for all that she has given me of help, encouragement, love and care, without which much of the joy of these two years could not have been.

Some of the duties of a President are not altogether easy, but the Annual Conferences are a delight. We had a really first-class time at Nottingham last year, and I am sure that, given the same good weather, we shall enjoy Bristol and Bath with equal pleasure.

We are indeed grateful to the Earl of Rosse who, as you know, is Chairman of the Georgian Group, for sparing the time to come to us today to talk on the protection and preservation of historic buildings, a subject of particular interest in your city and that of Bath and the surrounding countryside with its many fine buildings.

Tomorrow we are to listen to Mr. Lionel Brett's talk on the new city centres of Europe, which I am sure will prove equally fascinating. I hope that you will all think that we have chosen our lecturers and their subjects wisely.

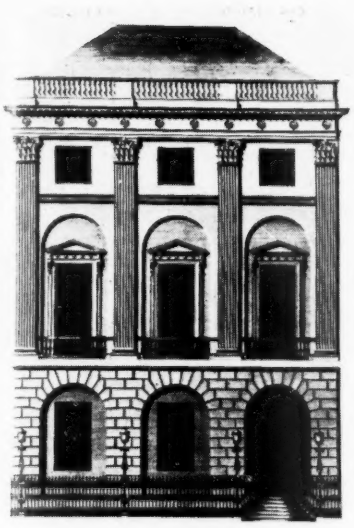
I will not take up more of your time now as I am afraid you will have to listen to me again for a short time at the Conference Dinner tomorrow night. May I, before I sit down, once again express our sincere thanks to all those who have done, and will do, so much to make our visit to Bristol and Bath a pleasure which we shall long remember.

Mr. R. S. Redwood [*A*], President of the Bristol Society of Architects, moving a vote of thanks, said: It gives me much pleasure on behalf of my Society to propose a vote of thanks to the President for his most able inaugural address to us. This year commemorates the centenary of the Bristol Society of Architects. We are marking this milestone in a number of ways we consider to be appropriate activities, but I think we all consider the British Architects' Conference to be the culminating high-light of our celebration and we are indeed honoured that our two cities of Bristol and Bath have been chosen as the venue for the conference this year. It is appropriate that the President of the mother Institute should preside at the coming-of-age of her second eldest daughter. You will agree no doubt that in spite of her hundred years of life her vitality is unimpaired. She now counts a membership of 400 architects and students and this betokens no bigamous or unnatural relationship between us but is symptomatic of that interest and understanding which lies between the R.I.B.A. and its numerous Allied Societies. During the presidency of Michael Waterhouse, the ties which unite the parent Institute and its Allied Societies have been strengthened. He has been an inspiration of goodwill in his profession and his kindly benevolence shows through all we have heard from him this morning. I ask you to record a hearty vote of thanks to the President for his inaugural address to us.

The Protection and Preservation of Historic Buildings

By the Earl of Rosse, M.B.E., F.S.A.,
Chairman of the Georgian Group

Read at the British Architects' Conference on 8 June 1950.
The President in the Chair



House in St. James's Square, by Robert Adam; now converted into an office

THE PRESERVATION OF HISTORIC BUILDINGS is a subject which I deem to be important, and I have devoted quite a considerable portion of my time to it for some years past and I therefore particularly welcome the opportunity of speaking about it to an audience so well versed and so expert in the subject in general. It is indeed with very considerable diffidence that I address such an audience, and I must crave your indulgence for any amateurish streaks you may note in my speech.

Until about a century ago appreciation of the importance of the arts, and of æsthetic values in general, could be considered automatic in any man or woman with any claim to education. This appreciation included a due regard for the value of fine buildings as works of art, quite apart from the material use to which they might be put. It would be useless to pretend that a number were not wilfully destroyed in each successive period of that more enlightened age, but normally this was only done in order to erect what contemporary opinion considered, rightly or wrongly, to be something better and finer. The action may often have been regrettable in itself, but at least the motives provided an arguable case.

With the industrial revolution came a change of attitude which slowly but surely pervaded almost every section of the population. Unrelieved materialism and commercialism became the guiding forces of the day, and considerations of beauty and amenity were almost entirely swept by the board. A rash of so-called functional but undeniably hideous factory buildings spread over the land, accompanied by serried rows of even viler structures for the unfortunate workers to live in. Industrial progress was and is not only inevitable but highly desirable; it is, however, quite unnecessary that it should always take place at the expense of beauty, whether natural or created by man. Many continental countries have a far better record in this respect, and exceptions such as Port Sunlight and some of the newer power-stations have shown more recently that care and forethought can often strike a happy balance between the respective needs.

Architecture is the most vulnerable of the arts. Unlike a picture, a book or a piece of furniture, a fine building seldom has a high intrinsic value, no matter how great its artistic merit. Again, the other works of art cost little, if anything, to maintain, while an old building can involve its owner in enormous expense. A building can not be moved except as a *tour de force*, and the site it occupies, especially in large towns, may often be infinitely more valuable once it is removed.

In cities and towns, too, the majority of the better buildings, particularly of the classical period, are in blocks, and the destruction or mutilation of only one house inevitably ruins the appearance of all others in that block and weakens the case for their retention. The Victorians were bad enough in many respects, goodness knows, but as the present century progressed and particularly in the years between the wars, the destruction became worse and worse. The German vandals did not destroy as many buildings with their bombs as did the British vandals during those 20 years between the wars. The present crushing rates of taxation and death duties have increased the danger yet more. No landlord is able to feel any security either for himself or his successors, and even the country houses and estates, which may be claimed to represent one of England's most notable achievements in the field of culture, have become threatened during our lifetime. It can, indeed, be claimed with some justification that the tide has now turned, as is evidenced in certain of the provisions of the recent Town and Country Planning Acts, but in all too many places everything worth saving has already been overwhelmed.

The authorities who have virtually the power of 'life and death' over ancient buildings, directly or indirectly, are by no means yet converted. Constant vigilance is still necessary. A great part of the main street at Grantham comprising many lovely houses is now in process of being taken down by the orders of the Ministry of Transport in order to speed traffic through that town on the Great North Road. Such action is of course the negation of sensible planning and the proper solution for such a problem is quite obviously to any thinking person a by-pass. Again, in Chichester, one of our most lovely towns, the general layout has been damned in the interests of car-parking and perambulators. Eminent town-planners, it is true, are often consulted in the first place, but then their ideas and plans are nibbled away until there is nothing left worth bothering about, all in the interests of speculation, people's pockets and for other sordid reasons.

You may reasonably ask why should any old buildings necessarily be preserved? Should not each succeeding generation be capable of improving on the works of its forebears? In certain cases this is no doubt possible, but only if a wide selection of the best buildings of the past exists for them to study; and it would be a bold man who would claim to surpass such great architects of the past as Sir Christopher Wren and Inigo Jones, albeit with some three centuries more experience to draw upon. Apart from so extreme an example, it is difficult to conceive of anything more fitting to the English scene than the golden churches of Northamptonshire or a typical Cotswold village; what living man could improve on them?

Let us admit at once that all old buildings can not be preserved. Very few deserve to be kept as ruins, and for all others a use must be found, which under the changing conditions of the modern world is not always easy. Furthermore, and particularly in the case of those in towns, there exists the problem of fitting them in with the necessities of town-planning. Some preservationists are inclined to be frightened of town-planning and to imagine that it is necessarily hostile to their aims. It is true that the two must often conflict, but it should be remembered that classical architecture is essentially planned, and that the first great British town-planner was Sir Christopher Wren. In his day, as in ours, planning may sometimes entail the disappearance of good buildings of the past, but compromises which leave the most important factors of both points of view intact can usually be reached. It is interesting to note that in Paris, probably the best example of a planned city (in Europe), the classical architects responsible for modernizing its layout drew a series of concentric boulevards round the central mediæval area, which they left virtually intact.

What could be done in the past can be done now, and for practical purposes old buildings may conveniently be divided into four categories. Firstly, there are those of paramount importance which must at all costs be preserved intact both inside and out and, except in a very few places, even if they conflict with planning considerations. This is a very small class. Secondly, come those where exteriors only merit complete protection; while in many cases it will be most desirable to include some at least of the interior, it will often have to be admitted that only by a complete remodelling inside can an economic use be found. Thirdly, there are the less important buildings whose retention is generally desirable but which would have to be sacrificed if planning considerations demanded it. Fourthly, there is the class whose loss in the normal process of time need cause no regret from any quarter. This is obviously a very broad classification and in particular, it should be emphasized that small houses and shops can often deserve keeping every bit as much as larger ones, especially from the point of view of retaining the atmosphere of old-world towns and villages.

A great controversy is raging—and for years has raged—over Mecklenburgh Square in London. It is not superb architecture but that little estate was once one of the finest pieces of planning ever achieved in the environs of London. The erection of buildings next to such carefully composed façades, if those buildings are of different material and of a much higher elevation, obviously ruins any features of the original; and to keep only one side of a square and let the other side have riot run over it, producing buildings, however well designed, that are not in keeping with the architecture of the original is thoroughly bad planning.

In Bristol there are a number of similar groups of buildings, and I am particularly struck with some of your little alley ways and courts; one group of buildings I was delighted to see had quite obviously had a lot of loving architectural care bestowed on it is Orchard Street. As a group it is one of the most satisfying and typically English I have seen for a long time and it really was encouraging to see the way in which it is being looked after.

It is one thing to postulate that such buildings should be preserved, but it is a necessary corollary, if the plan is to be put into effect, that practical proposals for their use should also be produced. In certain cases those in the first class will have to be turned into museums or institutions instead of being used for the purpose for which they were built. This will exhaust almost all the possibilities in this line, and for this reason it is necessary to agree that, probably in the great majority of cases, all other houses will have to be converted so as to be more suitable to modern conditions. The interiors may have to be completely gutted in order to effect this, but the French have long ago shown us that even such notable façades as that of the Place Vendome in Paris need not suffer as a result.

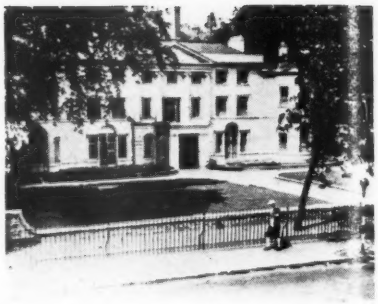
Sometimes the conversion will be into business or professional premises, at others into residential flats, but the general principle will be the same—that of turning two or more buildings that were planned for vertical use when considerations of time and labour were of no importance into one to be used horizontally. Big rooms may also have to be subdivided and new plumbing facilities and other offices inserted. It is useless to pretend that it is an easy job; in some ways it can demand more of an architect than the construction of a new house and the discredit in which the principle is held in some quarters is due to an all too prevalent habit in the past of not employing architects who had made a special study of the problem; or, worse still, not employing an architect and relying on some builder to provide something which was more a clumsy adaptation than conversion.

Conversion has also sometimes been attacked for being expensive. All building can be, and conditions vary enormously, but in general, new accommodation can usually be provided as cheaply, and often more so, than by the construction of new houses. There is the additional advantage that more valuable agricultural land is not used up and accommodation is provided in convenient areas where full public services exist instead of in remote ones where they do not. In short, by this method fine old buildings are preserved, and at the same time new homes are provided more economically and conveniently than would otherwise be the case.

The question is often put: can old buildings and modern ones exist side by side to mutual advantage? The difference between the traditional and modern styles is so marked that, in my opinion, the two should be kept apart as much as possible. Where, however, it is not, I submit that it is reasonable to ask that the modern building shall conform generally in elevation and material with the older ones. Design is less important, but it should be obvious that a ferro-concrete erection some six stories or more high in juxtaposition with a Georgian terrace or the cottages of a stone-built village can only have the effect of making them both look ridiculous, whatever their individual merits apart.

The material is of particular importance in England, since no country of comparable area has more varied scenery, and each district with such distinct character. It is impossible to think of the Cotswolds apart from their superb stone of which almost every building is constructed, nor of East Anglia apart from its magnificent flint churches. Every effort should be made to preserve the craftsmanship in the various areas necessary to continue building in the traditional material. Expense is often an almost insuperable factor, but recent experiments in the use of reconstructed stone appear distinctly encouraging. While the price is immeasurably cheaper the effect is indistinguishable except at very close quarters.

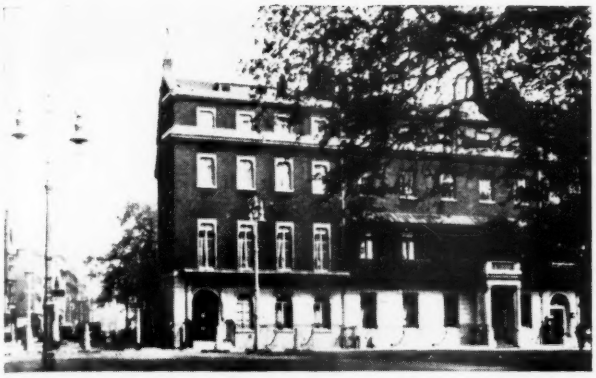
A few months ago I inspected the first examples I had seen of buildings entirely built of reconstructed stone. That was a



Crewe House, London, after conversion to an office

block of four houses in Worcestershire. Success had been achieved in making the reconstructed stone look as nearly as possible like actual stone; the roofing material was similarly reconstructed. The owner told me that the work had given complete satisfaction. Whether, of course, everyone will be as happy in about 20 years time about these houses is a matter which will have to be very carefully gone into. This is a hopeful method of keeping the character of our English country districts and of endeavouring to blend with the landscape in a time of austerity in materials and labour.

This factor of expense is generally the most difficult problem to be faced now that the principle of the importance of preservation has received official sanction in the recent Town and Country Planning Acts. Sufficient legal powers now exist effectively to protect from wilful destruction all buildings of value, but initiative on the part of some individual or authority is necessary to exercise the power on each occasion. The fact that the question of cost has not yet been faced up to acts as a horribly powerful deterrent. The position is vitiated still further by the penal rates of taxation which have been enforced in recent years. These have ensured that almost no private individuals have been able to keep their properties in a first-class state of repair and even less to carry out the reinforcements which are often necessary if their condition is not eventually to deteriorate. To quote from the report of the Bath Conference: 'Even before the War, the majority of owners only carried out sufficient repairs to make their properties wind and waterproof: architectural features such as cornices, columns, capitals, and architraves to doors and windows were left slowly to disintegrate. A good instance of this is the Circus where the façades of only three houses have had adequate reparation in the past quarter-century. In one instance 1914 costs of repair are available: the figure was £500. This included proper repair of all the architectural features of the façade, and the covering of the cornices with lead—a most necessary measure if the stone is to be preserved. It is estimated that the cost of similar reparative work at present-day prices would be about £1,750. Today, the position is even more unsatisfactory. Taxation has increased so greatly as to leave owners



Left: Georgian buildings in Berkeley Square, London, now demolished. Right: one side of Mecklenburg Square, London, of which the demolition is threatened

with little or no money to spend on 'inessentials'—and while a property in good decorative repair will sell or let for a higher figure than a dilapidated one, the replacement or repair of external architectural features does not materially affect its value. And it is, indeed, scarcely to be expected that owners in present times should put their hands into their pockets to finance unaided the heavy cost of such reparative work.'

As recommended on that occasion, the only solution would appear to lie in the State undertaking a proportion of the cost of repairs or necessary improvements to buildings of outstanding architectural or historic importance. The principle has long ago been accepted in certain continental countries, notably in France, Belgium, Holland and Denmark. While their arrangements differ in detail the owner is generally assisted by a grant of 50 per cent and sometimes more from public funds. The manner in which the money is expended naturally must be approved by the public authority, usually represented by a special Architectural Service. There seemed reason to hope that the team of investigators allotted to the Ministry of Town and Country Planning might eventually grow into some such organization but their drastic pruning by half by the Chancellor of the Exchequer has been discouraging. On the other hand, the establishment of an Architectural Service after the French model was included in the evidence submitted to the Gowers Committee by the Georgian Group and its forthcoming Report may have something to say on the matter.

Finally, criticism is easy. It is equally easy to say what should not be done but not so easy or practical, usually, to say what should be done. To do this you have to make practical proposals to enable a policy to be put into effect and at the same time to make due allowances for other considerations. The Georgian Group tries to be practical and realistic and to work with all authorities and with individuals by persuasion and teaching. I should like to take this opportunity of expressing on behalf of the Group our appreciation of the help we have had from the local authorities and also from a large number of Ministry officials both in London and the Provinces. We often have to attack Ministries but we usually find that their officials are sympathetic and helpful and when we have reason to complain it is because the evidence of the experts is in interests which would be contrary to our aims. Lastly, we, the Georgian Group, most particularly value any opportunity of working with learned societies and institutions such as the R.I.B.A. I thank you all for listening to me so patiently today and I thank your Institute for having given me the privilege of addressing you.

DISCUSSION

Mr. A. B. Knapp-Fisher, F.S.A., Vice-President, R.I.B.A.: In thanking the Georgian Group, through the Earl of Rosse, for the address we have just heard, I think the R.I.B.A. and the country as a whole can count themselves lucky to have such an adviser on the preservation and reconstruction of ancient buildings as the Earl of Rosse. He sees the problem—and it is not an easy problem—both from the historical point of view and from the point of view of contemporary needs. We all eschew, and quite rightly, preservation for preservation's sake, but I am sure there is nothing like that about Lord Rosse. He voices the sentiments of architects generally in regard to this problem without any false sentiments such as do sometimes creep in when one is concerned with ancient buildings.

Georgian architecture has always had a special appeal to me. I find it hard to conceive what our villages and country towns—and indeed some of our cities—would be like from a domestic architecture point of view had it not been for the architects and craftsmen of the 18th century. Therein lies the chief delight to ourselves and to our visitors from overseas. A good building is like an old master: it enriches the mind and quickens the senses. We do appreciate the constructive, realistic and sound understanding which lies behind Lord Rosse's address.

Mr. G. D. Gordon Hake, M.A., R.W.A. [*F*]: It is my privilege and indeed a very great pleasure to second the vote of thanks to Lord Rosse. We have appreciated his full and able précis in the short time at his disposal and what he has said is the result of much thought and deep experience. We appreciate also the courage of Lord Rosse in facing this body of architects. He spoke of Orchard Street and it is pleasant to recollect that that street was preserved very largely through the efforts of Bristol architects and they have indeed turned it into their main architectural quarter.

Lord Rosse also spoke of the difficulties connected with the preservation of terrace-houses. It is beset with difficulties. This kind of preservation must be done either through single ownership—which bristles with snags—or by very close co-operation of adjoining owners. We have, I am glad to say, advanced from the days of the over-enthusiastic restorer. We must as the years go by keep constant examination of these buildings before us and make sure that even the minutest defect is made good as soon as that defect is discovered.

Mr. A. Leonard Roberts [*F*], **Hon. Secretary, R.I.B.A.:** Lord Rosse has referred to examples of architecture planned by a master eye and designed with great dignity. There is a disturbing tendency for little man-made defects to throw the whole design 'out of gear' as it were. For example, tenants may spoil the whole effect by the erection of front boundary fences to their gardens. On this local authorities seem reluctant to exercise control. Where would be the charm of Milton Abbas if the tenants started erecting fences at the front? Architects, particularly those employed by local authorities, should keep a watchful eye. The attention of the Ministry of Health should also be drawn to this undesirable tendency.

Mr. Edwin Williams, M.B.E., M.A. [*F*]: The Earl of Rosse has made, unwittingly, a plea on behalf of the most vulnerable classes, namely, Grades 2 and 3 in the Ministry List. It is these which most merit our consideration because they form a very important part of our daily background. There also is a good deal of misunderstanding about the basis of the legislation to preserve these ancient buildings and there seems to be an impression that planning authorities are or should be burdened to

The County Fire Office, Piccadilly Circus; now demolished

The Adelphi Terrace; now demolished

preserve and maintain them and that the owners of the buildings are the authority's worst enemies.

Regarding those who exercise control it is, of course, quite possible to obtain town planning qualifications without the least sense of true architectural qualities and also to obtain responsible official positions as Planning Officers, so called, without any architectural sense, much less training, at all. On the other hand, there are too many cases of even very distinguished members of the R.I.B.A. whose measure of preservative zeal is too much tempered by regard for their clients' commercial and selfish interests.

One of the current problems allied to the question of expense arises also from a decade of neglect, war-damage, requisitions, high costs and probably most of all the gradual extirpation of private landlords in town and country who have for centuries been willing and able properly to maintain historic and ancient buildings. Of the remaining houses, many fall into the hands of local authorities who become the new landlords and few local authorities have followed the example of the Ancient Monuments Branch of the Ministry of Works in creating an organization to deal with works of art and historical buildings that fall into their hands; I recommend that local authorities who find themselves in this position would be well advised to create an organization that can deal with the works of art that come within their hands in the same way that the private owner on his estate would do, by assembling a little group of craftsmen and technicians. We live today in an age where responsibility is being shelved more and more by the individual and thrown on to autonomous authorities and thence in turn on the Government; inducements are very much lacking at the present time.

I was relieved to find that the Georgian Group also extend their beneficial activities to buildings other than Georgian.

Mr. J. L. Stephen Mansfield [*F*], of Sydney, N.S.W. Is the Georgian Group interested in the question of painting? A visitor to the United Kingdom finds that many beautiful buildings, and particularly rows of beautiful buildings, are spoilt by every house being a different shade of colour. Pediments are sometimes half orange and half white; I have seen some charming doorways in strong shades of nigger-brown. Although we must all agree that enlightenment is surely coming, I want to know if any vigorous propaganda is being indulged in to train the landlord or tenant to conform with uniform paintwork.

We in Australia are particularly interested in Georgian buildings because our architectural heritage, such as it is, is the early pioneer work which came over in those delightful colonial buildings which in Australia are becoming fewer every year, or are being mutilated by such things as the removal of glazing bars.

Mr. L. C. Howitt [*F*]. City Architect, Manchester. I was sorry to hear Lord Rosse's praise of reconstructed stone and a suggestion that it should be used for repairing buildings. I think it is nearly as horrible as artificial stone and I hope if there is opportunity to use real stone we should grasp the opportunity with both hands and thereby preserve the craft of masonry.

Mr. Albert Pritt [*A*]. The patron of the arts today is becoming the local authority and I think Lord Rosse has pointed out that the terraces of Georgian buildings can best be preserved by the absorption of the various ownerships into one ownership. We have to face the fact that in many cases that single ownership of the whole terrace will be that of the local authority. Logically from that the local councillor is the man to get at if anything happens you do not like and the complement to that suggestion is that the councillor's constituents are the modern patrons of the arts. The trouble is that most constituents have not realized it. This is due to faulty public relations work. In the national daily and weekly press and periodicals, much space is given regularly to painting, sculpture, ceramics and other crafts, and there are exhibitions in all towns of any size but I do feel that architecture is the Cinderella of press publicity today. Perhaps it is our own fault; it has become too much a professional matter. The lack of publicity in the press could, I think, be remedied by the local secretaries of architectural societies acting as press agents for the art of architecture in their societies' areas. The people in the street should have their attention drawn to the fact that their councillors must do something to see that the architectural beauties of their town are preserved and kept in good repair.

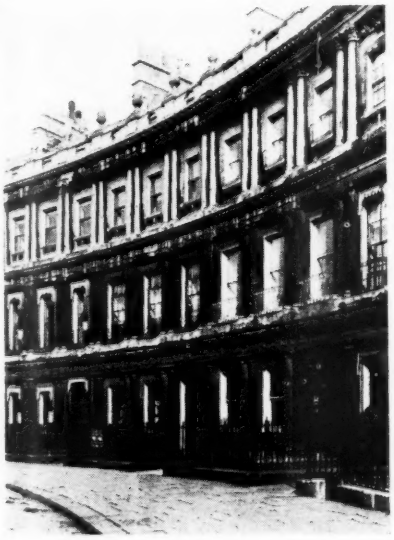
Two examples of how not to convert Georgian terraces

Mr. C. A. Crozier-Cole [*A*]. In Bath it was found necessary to restore the acorns around the cornices of the Circus. We did it by the use of reconstructed stone. Although they do not compare with proper stonework from the financial point of view they are doing their job, but we are not too happy about their wearing qualities. These ersatz acorns are not too popular among the professional critics and as we now know that there is a sufficient supply of stone to do the job properly, it would be a good thing to have them re-made and help in the training of apprentice masons.

Mr. T. P. Jenkins [*A*]. I rise to defend reconstructed stone. The difference between it and the 'real thing' can hardly be seen except from very close observation. I have seen houses faced with it and I think the overall effect is good.

Mr. Gilbert H. Jenkins [*F*]. Reconstructed stone looks perfect for the first six months, but within ten years . . .! I hope no architect will try to use reconstructed stone to repair a real stone building. Robert Adam who was a great Georgian

Above: the Crescent and, below, the Circus, in Bath



architect had troubles about finance—yes, stone was expensive even in those days—and when he built Derby House the front was faced with Portland stone slabs which averaged 1⅛ in. thick; and he used iron cramps. You know the result—we have not Derby House with us today. I suggest it could still have been standing but for the use of false materials, materials alien to a good architect's discrimination.

Mr. T. H. B. Burrough, R.W.A. [*F*]. I bow to the experts, but I was always given to understand that the Georgians were rather fond of reconstructed stone.

Mr. Alex Steele [*A*]. Perhaps it is unlucky, or lucky—I don't know which—that some of the Students from the School are not here today. If they had been here they would have taken up the cudgels on behalf of contemporary architecture and that would, I think, have elicited the fact that insufficient attention is being given to the *appreciation* of architecture in schools.

The Ministry of Health, and perhaps to a certain extent the Ministry of Works, has come in for a slight amount of veiled criticism, but I have a great regard for the Ministry of Health's idea of horizontal conversion.

Lt.-Col. Eric Cole, F.R.S.A. [*F*]. I would like to make a plea for the use of more substitutes rather than imitation of materials in the Cotswolds, a subtle difference which I feel will be appreciated by all present. Reconstructed stone does not imitate the usual stone walls of the Cotswolds, but it does blend more successfully than either special coloured bricks, or rendered buildings, and the jointing is arranged to avoid a mechanical pattern that the concrete block gives. The concrete tiles do not pretend to be stone, but in a very short time they weather down and are almost indistinguishable in colour from stone. The use of these two substitutes is, I feel, the answer to the problem of small housing. The costs compare favourably. In one case a brick-built house was estimated to cost £1,700, in stone £1,980, and reconstructed stone £1,770. I do agree with Lord Rosse that reconstructed stone should not be used for repairs of old houses.

The Earl of Rosse, M.B.E., F.S.A. I seem to have had a somewhat chilly reception to my suggestion about reconstructed stone. Perhaps I created the wrong impression. I am the last person in the world to suggest that it should ever be used to repair *stone buildings of the past* and Mr. Crozier-Cole's example of Bath acorns seemed to me a blatant example of where it should not be used. But you can not expect to persuade local authorities to spend something like £250 more on each house because you say the building of the house ought to be in stone and yet you owe it to your conscience (if not to the C.P.R.E.!) in a stone country to do your best to simulate real stone, and if the alternative is orange bricks of the kind we find in most modern housing schemes, then I submit your course is clear. I only put it forward as a possible solution to the insuperable question of cost.

I liked Mr. A. L. Roberts's contribution on the question of front fences though it was not included in my paper, but it is a point I consider important. Buildings exist by virtue of their landscape surroundings and should be in conformity with the natural layout of trees and other impedimenta of rural England. Our forbears planted better than we do and an acacia tree or a wistaria tree is far more suitable and æsthetically satisfying than poplars or privet hedges or virginia creepers. We in Britain have probably the finest gardens in the world in the way of plants but we are lamentably lacking in layout ideas. On the continent, there are the most superb layouts, particularly in Northern and Central France, but virtually no plants in them. Here we seem to specialize in beautiful plants and no thought-out layout round them. If only we could emulate some of the continental countries in the care given to layouts and include some of the admirable plants which grow in England it would be better for architects and landscape architects and their clients and the public.

Another speaker was glad to hear the Georgian Group takes an interest in other buildings as well as Georgian. Naturally this is so. The Georgian Group only specialized in Georgian architecture because that seemed in the rip-roaring 'thirties the style most threatened, but it is obviously not the only satisfying architecture in the world and I am the first to admit it.

Mr. Mansfield from Australia spoke about paintwork and glazing bars. We consider these to be of the utmost importance and we have a propaganda pamphlet devoted to that purpose. I have not had the opportunity of visiting Australia but I have been able to see a little of the beauties of Colonial architecture in the United States and I have been tremendously impressed by the need for using proper and tasteful paintwork and for the correct replacement where necessary of glazing bars. I think we in England have a great deal to learn about tasteful paintwork.

In reply to Mr. Steele, I am not a critic of contemporary architecture. Because I make a plea for the preservation of classical architecture I do not mean that I consider contemporary architecture without merit. In all the arts one's own period is invariably the most difficult to judge. It is difficult to think what people will think of the arts of today in a couple of centuries. (Perhaps it is well we should not know.) Of contemporary architecture I am a novice critic. I admire some of the new factory buildings and particularly the new power stations.

In the course of his introduction to a comment, a speaker reminded me that Georgian architecture did exist outside England. I believe he was referring to Scotland. I accept the admonition because I do know this conference caters for architects from Scotland and Ireland as well as England. I was unable to refer to the lovely Georgian architecture of Edinburgh, for example, because of the power of the clock. And as to modern buildings, one of the finest modern buildings I have ever seen anywhere in the world is Collinstown airport outside Dublin.

Ironwork balconies of Georgian houses in Clifton, above Hotwells and the Avon gorge

The New City Centres of Europe

By the Hon. Lionel G. B. Brett, M.A. [*A*]

Read at the British Architects' Conference, 9 June 1950
The President in the Chair

FIVE YEARS HAVING ELAPSED since the war in Europe ended, it seems an appropriate time, as well as an appropriate place, to take a look at some of the projects for rebuilding the devastated centres of her great cities, to see if we can form any impression of the way the wind is blowing. To do this effectively we shall need to take the broadest possible view both in space and time, and to hover as it were at a great height over these city centres, so that we can see their physical structure as the embodiment of their history.

It is impossible, I believe, to reach a full understanding of city building unless one is aware of what the Germans call the *Weltanschauung* of the builders, their way of looking at the world. Obviously, for instance, the medieval city reflects the loves and fears of the medieval mind, its need for human company and protection against the cold wind that tears across the featureless landscape, the fearful plagues and the destructive armies of the outer world. Sir Kenneth Clark tells us that 'Paradise' is the Persian for 'a walled enclosure', and that it was only when the material amenities of civilization increased that Elysium could be imagined as an open landscape. When we in our turn feel, as in wartime we do, the chill of danger and discomfort, our nightmare, like theirs, is to be caught unprotected in a huge open space, and we dream like them of precincts, of intimacy of scale, and of the pleasures of the little piazza. For a holiday we go to Bruges or Delft rather than Potsdam or Versailles.

Versailles, of course, is the other extreme. It is the human eye looking out on the world rather than in upon itself, the human mind in one of its moods of elation and self-confidence. It is the basic faith of science that sooner or later mankind will master its environment. In terms of city building, this faith expresses itself in geometry, in perspective and in the cool calculations of the engineer. There is no need for me to amplify the Renaissance definition of town-planning as the application of geometry to human environment, because after four centuries during which an unbroken tradition has been handed on through Bernini, Wren, Le Notre, Wood, L'Enfant, Haussmann and Le Corbusier, it has succeeded in establishing itself in the popular mind as an axiom. 'We are going to be town-planned' has come to mean 'we are going to be straightened out'. The last man in the above list, describing an early skyscraper project as Cartesian, aptly epitomized a period during which the planning of cities showed an extraordinary continuity and remained quite aloof from the series of revolutions which befell the other arts.

I have distinguished the medieval outlook from that of the Renaissance, but I do not imply that they are mutually exclusive, or even that the second is necessarily an advance on the first. On the contrary I think they represent a permanent ambivalence in our mental make-up. Each one of us has his days of faith and his days of fear, days when we look outwards and days when we look inwards. A good house is designed to accommodate both moods, and it would be surprising if city-planning did not show traces of both attitudes.

I suggest, therefore, that we approach this enquiry without preconceived notions of what is or is not the 'contemporary' way to plan a city centre. There are functional requirements: there is the spirit of the place, and there is the spirit of our time, and the designer's business is to fuze the three. That is all. It would be tedious and unnecessary to define each of these terms; but as to the first, functional requirements, I think it may help us in appraising examples if I lay down three deceptively simple rules:

1. City Centres must be planned for the safety, convenience, and pleasure of the pedestrian.
2. City Centres must be planned for the effective use of the motor vehicle.
3. Buildings old and new must be appropriately related with one another.

Before we look at individual examples I must apologise in advance for three things. The first is the rather monotonous series of plans which you are going to see; I only wish that there were more actuality about them all. The second is the necessarily superficial view which I have been bound to take of many places that I have never been to and of many reports and articles in languages which I can not read. The third is that some of the plans are probably already out of date. It is of the nature of plans to be out of date and I do not think it makes them any less interesting. In covering so vast a subject in so short a lecture, all one can possibly do is to select a few examples, and for doing so the only possible criterion is that there should be something especially interesting about them. A map of France, showing the number of towns damaged during the war, all of which have prepared post-war reconstruction schemes, gives some idea of how much we shall have to leave out.

The first thing that must strike anybody who surveys this field is the extraordinarily unscientific nature of a great many of the schemes. The damage at Kiel, for instance,

Kiel. Competition scheme for the redevelopment of the central area

though patchy compared with some German cities, is as far as I can remember worse than anything in England and certainly enough to justify some fundamental thinking. Yet here is a project for rebuilding full of what I can only call howlers, chaotic in bone-structure and pure murder from the traffic point of view. Just visible in all the main roads are tram lines, and I suspect that a heavy investment in trams has stultified creative planning here just as it obviously has at Cassel, where again trams are an outstanding feature. Unlike Kiel, which grew rapidly and chaotically at the end of the nineteenth century, Cassel, dominated by the most fantastic baroque vista in Europe, had a good deal of the French manner in its street plan, which survives in this project, the chief features of which have existed since the eighteenth century. But once again we find no sign of a traffic ring or of the central precinct such as has become a commonplace in this country. This is the more surprising since German cities, with their medieval core surrounded in so many cases by a splendid *Ringstrasse*, lend themselves so much more easily than ours do to the kind of planning which most people think is the best way of safeguarding the pedestrian and speeding the motor vehicle. If we look at the plan of Dresden, for instance, as it was, we are at once struck by its perfect suitability to modern ideas. Here ready made is an inner ring, a middle ring and a series of useful radials. The railway station is ideally placed on the middle ring and in the centre of it all is the perfect pedestrian precinct, pretty well impenetrable to wheeled traffic. It would be difficult to spoil such a plan, but if you look at the rebuilding project I think you will agree that it succeeds in doing so. Notice how a series of cross-town short-cuts are inserted so as to destroy the usefulness of the two rings, and all blown

Dresden as it was

Dresden as replanned

up to colossal boulevard widths with really terrifying intersections. Pure Haussmann. No roundabouts anywhere. In front of the ugly (1905) Town Hall, which is to be retained, is a monumental piazza which is worth a glance at closer range, as a traffic engineer's nightmare.

I am being severely critical of some of these German schemes because I think it is the business of architects, particularly in so small a peninsula as western Europe, to learn from one another, and here after all, published years before the Dresden project, was the Coventry scheme, with its deliberate change of scale from the motorists' inner circle to the pedestrians' precinct, its careful avoidance of short cuts and its sensitive treatment of surviving buildings. There are arguments for and against the ring principle, but if one does adopt it this is the way to do it.

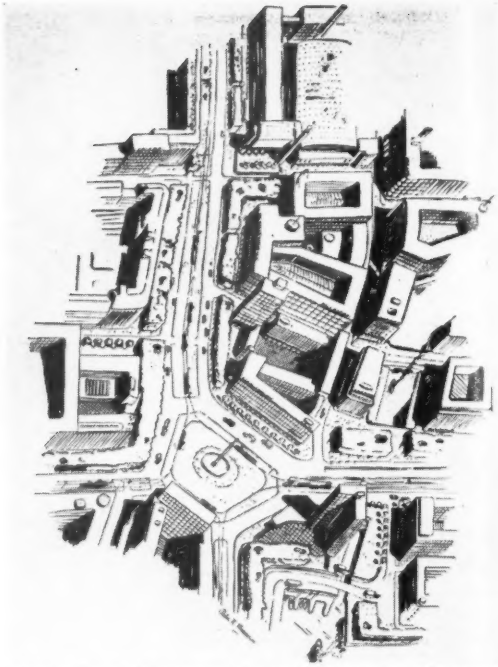
This lack of realism and hard thinking is not unfortunately confined to Germany. Surprisingly enough there are examples of it in France. At Tours, for example, there were two obvious bombing targets, the bridge and the marshalling yards. Damage was fairly concentrated, and the town needs a new bridgehead and a new station approach. To move the station back on to the main line was an obvious operating economy, and would clear a substantial sector of the town for rebuilding. The use made of this opportunity has been to create two separate systems of radiating boulevards reminiscent of the Piazza del Popolo. They are unrelated to one another and the radiating boulevards lead nowhere. There is no attempt at a traffic structure for the town as a whole, the new building blocks are arbitrary and uneconomic and there is no recognition of the existence of the motor car. Orleans, with a rather similar bridgehead problem, has met it by a general widening and straightening of its existing streets—in fact the process which, as I mentioned earlier, is vulgarly called town-planning. For the main square a pleasantly Victorian system of traffic circulation has been devised, and one can visualize the carriages weaving sedately round the statue of Joan of Arc. Along these solidly built street frontages, all of about the same width, I can see no sign of a car park, and previous remarks about intersections apply.

I come now to some cities about which one should speak with less frivolity. The first of these is Rotterdam. Though the Germans killed fewer people in Rotterdam than the allies, they destroyed more bricks and mortar, 11,000 buildings in fact, and they left 650 acres, the whole commercial centre of the town, completely clear for rebuilding. This was not an unmixed disaster. The great port, whose prosperity is bound up with that of the Ruhr and the Rhine, had quintupled its population in sixty years and its centre was congested and ugly, with an uninteresting river frontage and a difficult bridgehead problem. So far as the outsider can judge, the plan meets these difficulties. There is the correct contemporary apparatus of multi-tracked roads, multi-level crossings and roundabouts, and there is a perfectly clear distinction between the traffic routes, which are really generous (wider than the Champs Elysées in some cases), and the little pedestrian shopping streets. Moreover the plan does promise to make something of the river, and to restore to view that gay forest of masts and all the fascinating nautical equipment which gives a lift to the imagination in any port, and which we see crowding the waterfront in eighteenth century prints. And yet one can not escape a feeling of disappointment. Those tree lined boulevards bordered by hollow squares of building could be in Paris, or in Brussels. Given a clean slate, is this the twentieth century contribution? If we look closer we shall find some pleasant corners, with pedestrian courts and alleys which could be pleasant to walk in if they do not have to be packed with cars. But one has to remind oneself of the freedom the planners possessed. Those trams, for instance, which seem to be becoming symbols of conservative thinking, are in evidence again. If one can define the missing element in this Rotterdam plan, I would say that it lacks a dominating idea. A work of art results, to my mind, from a sudden, possibly even an arbitrary, gesture of the imagination. Our modern planning, so often the work of anonymous teams and committees, is of its nature hostile to anything so intensely individual. But without it, civic design soon becomes a meaningless assembly of forms which one feels could be shaken up like a kaleidoscope without becoming any more or less significant.

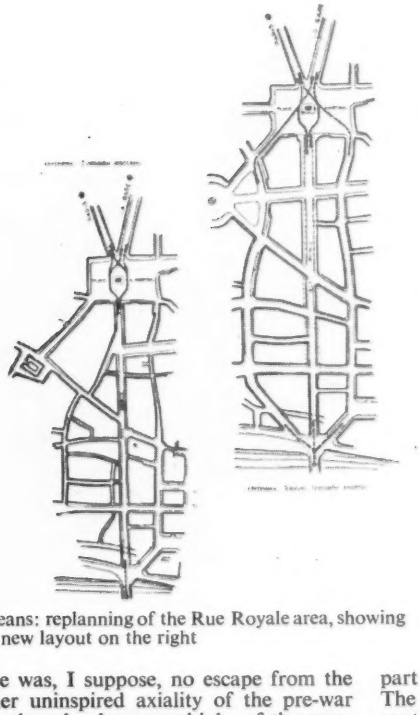
We might glance a moment at a great English port, Liverpool, where we shall find planning of the same order. This plan differs from Rotterdam's in its more rigid, perhaps even exaggerated, adherence to the principle of the inner ring, as to the value of which in a dockside town it would be presumptious for me to express an opinion here. It is in the scale and arrangement of building blocks that there is some affinity with Rotterdam.

In the same line of thought is the 1948 plan for central Berlin. Here again we have the inner ring as the outstanding if not the only contemporary contribution. Inside it

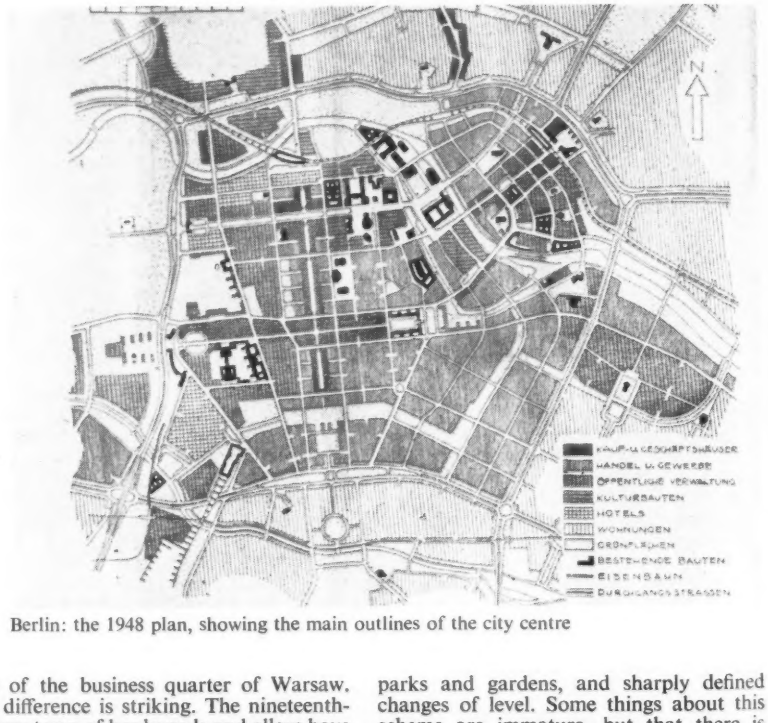
Tours: redevelopment of the bombed bridgehead and of the area previously occupied by marshalling yards



Rotterdam: aerial perspective showing treatment of a central traffic intersection



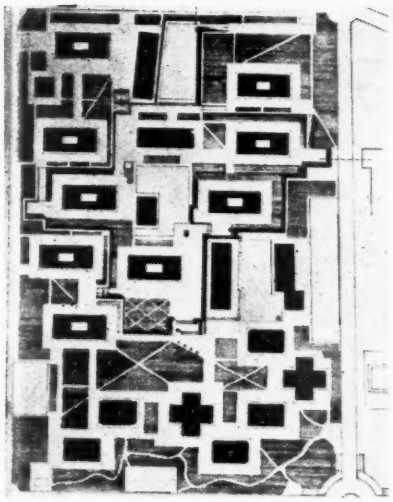
Orleans: replanning of the Rue Royale area, showing the new layout on the right

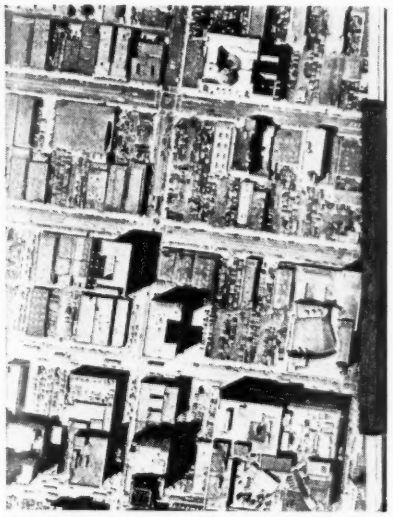


Berlin: the 1948 plan, showing the main outlines of the city centre

there was, I suppose, no escape from the rather uninspired axiality of the pre-war city, though when one thinks of the complete ruin of this whole area one is struck by the conservatism of the planners. I shall have more to say on this matter later on.

It will perhaps give point to what I am trying to say if we look at a scheme for part of the business quarter of Warsaw. The difference is striking. The nineteenth-century town of boulevards and alleys have vanished from the scene, and we have the 'superblock' in its pure form, an oasis bounded by fast motorways. Inside it a complicated formal pattern is worked out, of which the elements are low buildings and tall and the air between them, paved car parks and gardens, and sharply defined changes of level. Some things about this scheme are immature, but that there is nothing unrealistic about it can be proved by an airview of the business centre of Los Angeles, a city whose form has been dictated not by a dozen planners but by a million motorcars. You can see them in the picture of Los Angeles. Notice the





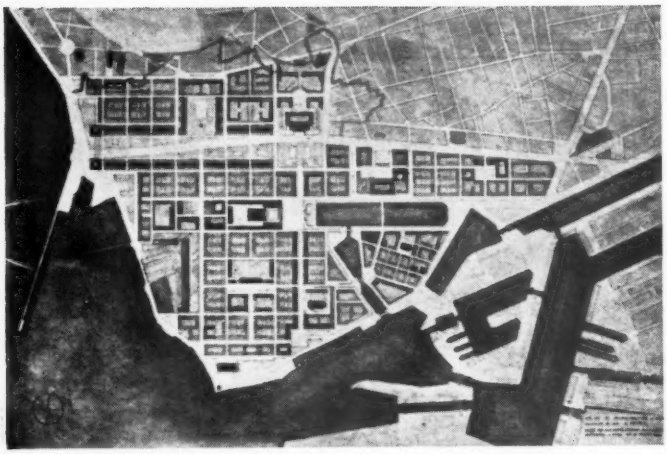
Above: sketch for a business district in Warsaw, showing affinity with existing development in Los Angeles (below)

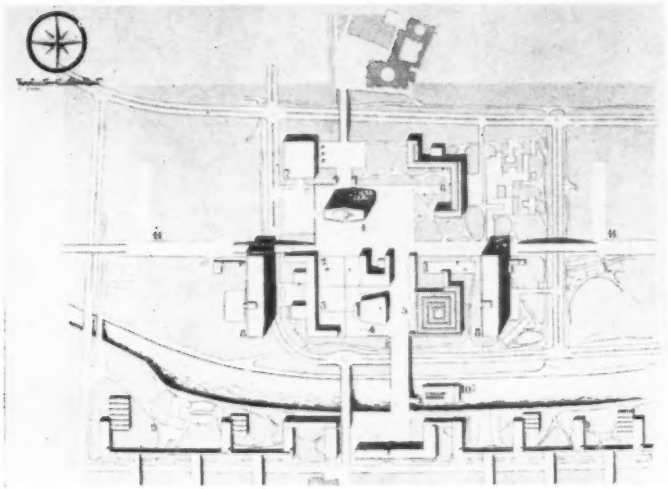
Warsaw: the new city centre, showing intersection of the two central axes of the city

resemblance to the Warsaw project in the proportion of building to open space. Take away the obsolete and dangerous road grid and you have the sort of pattern which the modern city centre, left to itself as it were, is trying to form. Then think back for a moment on some of the schemes at which we have been looking.

Warsaw, to whose tragic story we owe a little more than one brief reference, has addressed itself to its colossal task on principles not unlike those which I believe we should have adopted in similar circumstances. Although two-thirds of its population had been massacred and three-quarters of its buildings had been razed to the ground the vast investment in underground services, and the force of public opinion, made it out of the question to rebuild elsewhere. The decision was therefore taken to restore the historic citadel and rebuild its chief monuments exactly as they stood, to clear the rather squalid area between it and the Vistula and plant it as a park, to maintain the rectangular planning of the nineteenth century business district to the south, while greatly widening the Marschalkowska and other main traffic arteries, and to surround this rebuilt centre with a series of island neighbourhoods at a comparatively low density, set in a great sea of open space. Warsaw is unique among great cities in having absolutely straight and direct north-south and east-west axes which meet at the central station. Supplemented by parallel routes in each direction, of which the road tunnel under the old town is the most spectacular, these great cross-roads remain the key feature of the plan. No medieval spider here with its legs bound by a series of rings, but the right angle in all its grandeur. One other thing about this Warsaw plan must be mentioned: it is being carried out, and at a speed which I believe to be unique in Europe.

Let us spend a little longer behind the Curtain, but go further east. It is well known that the full classic *fortissimo*, which is generally felt to be inappropriate in the countries of the west, has found powerful support in this latest and greatest of dictatorships. I take the fairly small Black Sea Port of Novorissiysk as an example of many similar schemes. It is not easy to comment. One need only try to visualize these heavenly mansions and courts of praise inhabited by workmen in black suits, buses, jeeps, lorries, and the varied apparatus of a modern dockyard to feel a hopeless sense of unreality. I am not one of those who regard symmetry as immoral, and it is obviously possible, as in the scheme for Hull, to combine it with the freely flowing lines best suited to motor transport. But I can not believe that a city plan which would have done very well for, say, Alexandria in the 5th century A.D. can be equally appropriate for Novorissiysk in the 20th.





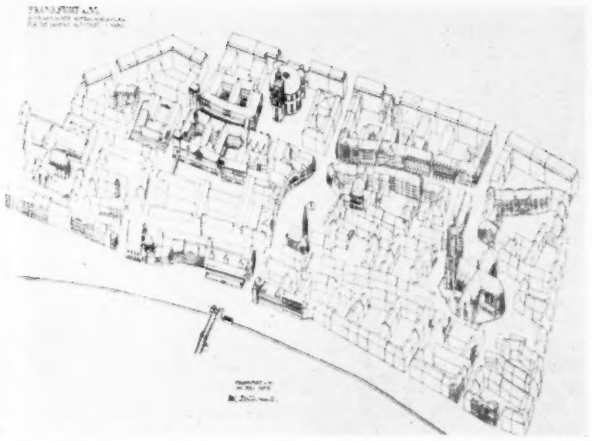
Top left: Le Havre; project by the Perret atelier for rebuilding the totally destroyed port area. Below left: Saint Dié; Le Corbusier's rejected design for the civic centre and the industrial belt. Above: Maubeuge; Lurçat's scheme for the *decongestion* of the town centre and rebuilding of river frontages

Utterly remote from such pomposities, yet finely classical in form, is the work which Perret and his atelier have done at Le Havre. Before the total destruction of the central area and the houses of 56,000 people, Le Havre was a town of typical 3-stage Continental pattern. The little medieval port was packed tightly into the southern tip of the peninsula. On the flat fields to the north, a rectangular New Town was added in the 18th century, right up to Vauban's fortifications which ran from the river to the sea. Beyond them the 19th century had contributed the usual planless suburbs. The fortifications made an east-west axis, the old main street, extended northwards, a north to south one. These two axes remain in this project, and they meet at the town hall. The rectangular grid of the 18th century is extended over the whole town centre to a rigid module of 6.25 metres, to which all framed buildings are to conform. It has also been possible, owing to the perfect flatness of the site, to lay down a vertical grid. Streets are placed 1.5 metres above normal ground level, with all services accessible from passages under the pavement. The whole area thus has two ground levels as it were, and this has obvious aesthetic and practical advantages. At least the car parking problem is out of the way.

This scheme of Perret and his atelier is of the greatest interest and we must hope that it will not be watered down. It is the only example I have found of the pure rationalism and hard thinking in which the modern movement originated, untouched by subsequent romantic aberrations. It is of the day when Le Corbusier proclaimed that 'the right angle is the essential and sufficient implement of action, because it enables us to determine space with absolute exactness'. Such precision may be un-English, but I don't think it is un-Scotch, and I do hope that when the moment comes to rebuild Princes Street, Edinburgh will have equal courage, and will accept the challenge of that splendidly long and level and rectangular site.

Two points of detail do of course occur to the outsider. The first is that there are too many blind cross-roads at the moment. This of course is curable. The second is that Perret's logic as a constructor is not matched by an equal sensibility in spatial relations. If we compare this frigid town square, which does I'm afraid remind one of the work of Hitler's architects, with the Le Corbusier's equally spacious civic centre for Saint Dié, we see the difference between science and art. Le Corbusier by exploiting two levels in a way that is both practical and dramatic, has produced a true acropolis of the 20th century, and it is simply tragic that because of his passion for residential skyscrapers and equally passionate local opposition to them, we shall never see it built.

It is to be hoped that Maubeuge, for which another distinguished French modernist, Lurçat, has done an interesting scheme, will show a greater sense of adventure. This is another of Vauban's fortresses, with an old market town and a lot of barracks inside the walls, and outside and quite detached, some sprawling suburbs and an industrial patch along the river Sambre. During the war the shopping centre was destroyed and the barracks survived. The problem is to rebuild the centre and bring it into relationship with the rest of the town. Lurçat does this by what he calls 'decongestion'. The town centre is extended southwards to the Sambre. Once again a town that had turned its back on its river, is turned round, as it were to face towards it. The administrative centre is moved outside the walls into easier reach of the rest of the town. There are riverside walks and drives and a ring road that does not look particularly inviting. But the distinguishing feature of this scheme is its sensitive



Above: Frankfort; official scheme for the rebuilding of the medieval Old Town. Right: Middelburg; above, the old town showing destruction in black; below, the rebuilding plan

grouping of buildings and the happy relationship between building and open space. The result is a whole series of little *places*, all quite small in scale and one feels easier to live in than the vast *agorae* of Le Corbusier.

The clean slate available at Le Havre, at Warsaw, at Rotterdam, is only one of the problems facing our generation. We have also to rebuild old cities in which damage is patchy and surviving buildings have to be integrated in the design. There is a school of thought which believes that in doing so we should have regard to the intentions of their original builders. For Vienna, for example, someone has worked out a scheme in the so-called Gothic manner to improve those glimpses of the spire of St. Stephen's Church which can be had from surrounding streets. This kind of minute work is useful enough, and certainly more appropriate than putting the old building on a pedestal in the middle of a huge open space. But the trams are with us again, and to judge from all these weaving lines for traffic, it will be certain death to try and look up at the spire. How much more intelligent is the Coventry scheme by which traffic is deflected right outside the Cathedral precinct, and space created for Johnny-head-in-air without any undue formality.

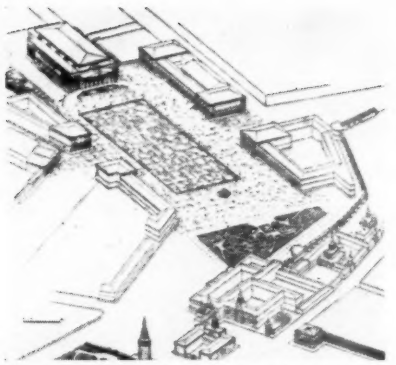
Two other Continental schemes for the rebuilding of medieval towns are of some interest. The first is Frankfurt. What is projected here is nothing less than a kind of Gothic Williamsburg. I do not myself feel that there is any justification for this. What remains of the medieval street architecture of the *Altstadt* could I believe have played its part in an imaginative scheme of precinctal character without turning the whole place into a museum. Frankfurt after all is a great city with a high reputation for modern architecture, and the effect of stepping straight from the architecture of Ernst May into the pseudo-architecture of Hans Sachs would be sinister in the extreme. It is partly a matter of scale. The little Dutch walled town of Middleburg, which was all but obliterated during the inundations of 1940, is surely fully justified in rebuilding its ancient centre on a ground plan which is obviously medieval in inspiration, though it takes advantage of the destruction to improve on the medieval street plan in all sorts of ways so as to set off its public buildings to better advantage and improve traffic circulation. This is a most sensitive little scheme and one is glad to know that it is nearing completion.

When it comes to classical buildings, it is no doubt true that their architects would not have chosen the queer setting of many of them. That dramatic moment, for example, when you emerged from the intricate sun-baked slums between the Tiber and St. Peter's into the overwhelming grandeur of Bernini's piazza was not, I imagine, intended by anybody. But it seems a pity to have taken it from us and to have put in its place an ordinary Parisian boulevard. Similarly, Moscow will be a very much duller place when the Bolshoi Theatre, hitherto hemmed in by small buildings which look as though they set it off well enough, is seen at the far end of a terrific neo-classic parade ground. And I doubt whether St. George's Hall, Liverpool, though a decent enough building, will be felt to stand up to the fanfare it receives in the city's reconstruction scheme. Of this particular problem we have in London as good an example as any. As everyone knows it was Wren's intention that St. Paul's should stand in a symmetrical piazza with a long axial approach from the west. During the war a committee of the Royal Academy proposed to revert to this arrangement, although since Wren's day the city had grown on quite different lines. This second attempt to impose upon the essentially precinctal and informal character of central London a piece of Parisian geometry has failed like its Baroque predecessor. In the Holden-Holford plan, London's extraordinarily persistent and complicated character wins again. This seems to be symbolized by the retention of those oblique views of St. Paul's—from N.W., N.E., and S.E.—which have been presented to us by a series of accidents; not one of its main axes is allowed any authority over surrounding streets. I think we are right to do this, however many ghosts may be disturbed. Time creates its own values, to which antiquarians are blind, and more has been lost than gained by well-meaning attempts to carry out the intentions of men long dead, whether in a country house, a parish church, or a city centre. If this is true of planning, still more is it true of architecture. We must hope that our own will not, in the words of a recent writer, 'be so crazed and bestial that it must be made to wear a mask when it comes into the presence of Sir Christopher Wren'.

Now that we are home again, perhaps a little out of breath, I would like to use the few moments that remain before the lights go up to sum up my own reactions to what we have seen.

I suppose one's first impression is of diversity of aim and style. The argument that our period lacks an architectural style of its own, irritating though it is to the architect and probably untrue, does gain some force from the extraordinary assortment of plans we have seen, in which every dead horse from Julius Caesar to Camillo Sitte is revived by somebody. It is, I hope, a surprise to English architects, who have reached a comfortable if slightly smug unanimity upon their happy mean, to find foreigners still gesticulating wildly and rushing to every extreme. I must say that I am glad they do. Western Europe may look insignificant now a days on the geo-political map of the world, but it still seethes with more ideas, and expresses itself in more varied accents, than either of the vast empires that occupy the rest of the world.

One's second source of surprise, and of



Moscow: proposed monumental square in front of the Bolshoi Theatre

disappointment, is at the general conservatism of these cities. The *Villes Radieuses* which many people imagined, and some people actually drew, emerging from the ashes of the 19th century, are evidently not going to materialize. Warsaw and Berlin, Rotterdam and Stalingrad are not going to show us a sudden mutation in the evolution of cities. There are two perfectly good reasons for this. The first is that there simply wasn't time for the immense amount of research and discussion which would have been necessary for a fresh start to be made. Improvization is the only way of meeting the aftermath of war, just as it is the only way of meeting its onset. In face of the homeless millions that encamped among the ruins as soon as they were cleared of explosives, the only recourse was to get something up quickly on the easiest available site. Which indicates reason number two—the intricate web of underground services (not to mention tramlines) in which so much of a city's capital is locked up, and which puts a premium on every departure from the existing street pattern. There is a third reason, not such a good one, which I will come to in a moment.

Among the few points of agreement among the plans is the attempt to make something of the waterfront. A great many cities which owed their origin to a great river or harbour frontage had allowed that frontage to get cluttered up with industrial impedimenta, turned their back on it, and looked in some other direction. Kiel, Tours, Orleans, Rotterdam, Warsaw, Stalingrad, Hull, Le Havre and Maubeuge, as well as London, are examples I have already referred to, and there are many others. It is good to know that this splendid old city of Bristol is one of them, and proposes to place its new public buildings, set among trees and lawns, in the bend of the Avon. Water is architecture's most flattering admirer and slave, and it was high time that it were brought into service again.

There are other more obvious improvements facilitated by war damage, and most cities have at least made a gesture in their direction; more generous open spaces, lower densities, ancient monuments set off to better advantage, improved traffic circulation. In many cases, however, the parking problem has not been realistically faced, and in many others the contradictory requirements of the pedestrian and the motor vehicle have not fired anybody's imagination.

If I were asked what is likely to be the most significant change which our generation will make in the character of city centres, I would say that it is the revival of the *piazza*. Even the worst of the schemes we have seen shows more interest in the square than in the street, and the best of them show an awareness of space which has not been seen in Europe since the Baroque. The corridor street, the axial vista and the built-up *rond-point* are on the way out, and there is a new freedom in the grouping of buildings, which tend to form a series of asymmetrical courts. This freedom, which is the greatest possible boon to any designer, is the first legacy of modern architecture to city planning.

But that is about as far as one can go. Common denominators are hard to find, and one comes back to the contrasts. The most significant of them all is in the degree of energy with which the plans are being implemented. Here materials, labour, finance are important, but far more important is the psychological atmosphere to which I referred at the beginning of this paper. Europe at this moment is a continent without a heart. The German *Mittel-Europa* lies bleeding, its future under the present set-up so uncertain that another war must seem a less fearful prospect to it than to others. The best-planned, best-organized and cleanest cities in Europe are heaps of rubble, and in the present German mood there is no point in doing anything about it. Reconstruction on the scale demanded of Germany requires a heroic effort of the same kind as is needed in war. It needs above all a firm, an unreasoning faith in peace. What is required of all those who build in Europe today is an act of faith, and I am sure that this gesture of rebuilding the centres of our cities, which we have yet to make in this country, is itself a contribution to the structure of peace.

Acknowledgments: Among those who have kindly helped in collecting material for this paper, the author wishes particularly to thank the following : Mr. J. M. Richards, Mr. Arthur Ling, Mr. C. E. Alexander of Arnhem, Dr. Pierre Vago, Mr. A. Slonimski and the Director of Public Works at Middelburg.

DISCUSSION

Mr. R. E. Enthoven [*F*]. Your applause expressed far better than I can put into words the sincerity and thanks you feel to Mr. Brett for his enthralling paper. Mr. Brett was well served by the fairy-godmothers who attended his christening. They gave him broad vision and a keen and sensitive mind. They also gave him ability to express himself on matters of great complexity in clear straightforward English, very refreshing against the modern background of strange clichés and meaningless shibboleths.

Mr. Brett's paper is a penetrating analysis of the problems that have to be solved all over Europe in the rebuilding of war devasted city centres. He has not hesitated to be critical, but I feel that the authors of these schemes—even the German ones—had they been present, would have been grateful rather than resentful. A distinguished French architect recently complained to me that town planners tend to be hypnotized by traffic circulation. In Britain today, however, we are, I think, achieving a better balance between the important factors that Mr. Brett has assisted us to sort out. In any event we are, thanks be, not hypnotized by trams.

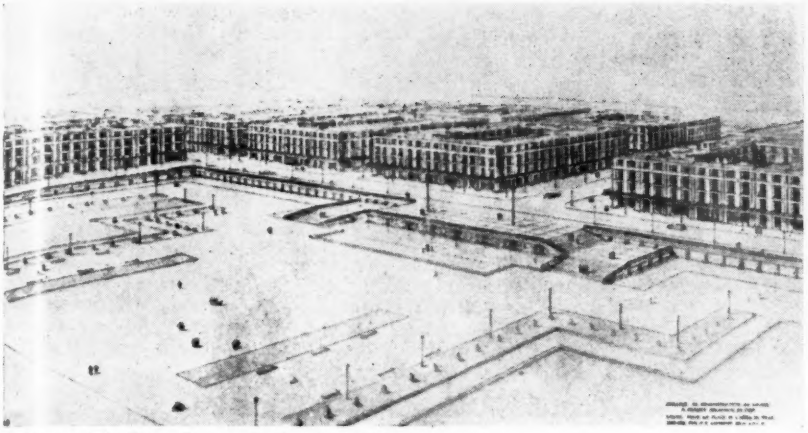
His paper has been very valuable and has brought out a great many interesting points, not least how the anonymous team should, and must, be kept subsidiary to the individual genius. It is with great pleasure that I propose a grateful vote of thanks.

Mr. H. Anthony Mealand, M.T.P.I. [*F*], City Planning Officer, Corporation of London. I am so much in agreement with what the learned speaker has said that I do not propose to be critical. I must, however, cross swords with him about his interpretation of the expression, 'We are going to be town-planned' as meaning, 'We are going to be straightened out.' No town planner would for one moment think that planning was merely a straightening out of a city. He has to think of three things: (1) the preservation of all that is good of the past, (2) to have better living and working conditions for the present and the future, and (3) the chaos of the traffic problem. On these three things he must base his plan.

I would like to tell you one or two things about the City of London and its plan. I go straight from the idealistic to the realistic. My work is to detail the Plan for the City of London and to bring it into practical being notwithstanding all the difficulties of town planning law, building licences and the hundred and one other things about which you all know well. The task of Planning Officer is by no means an easy one but, with the help of the very enlightened and far-seeing Town Planning Committee of the Corporation of the City of London, I am determined to see that that Plan is implemented with all the vigour and enterprise I can muster and I have been given full powers by the Corporation to deal with that Plan substantially as it now stands.

What are we doing in the City of London? The City consists of 677 acres of land, and of that, 231 acres are subject to a Declaratory Order, namely, one third, and the Corporation proposes, where necessary, to acquire that land. The Corporation, I may say, is not averse to private developers; on the contrary they prefer private developers to do the work wherever possible, but where necessary compulsory acquisition powers will be used to ensure conformity with the plan.

As an initial step, seven sites totalling some 46 acres have been selected for compulsory purchase. These sites have been placed in order of priority, but up to the time of speaking several of the sites have



Le Havre. The Town Square. Project by the Perret atelier
(See also the plan on page 306)

been taken over by private developers with the concurrence of the Corporation. The area immediately East of St. Pauls, however, has already been included in a C.P.O. which is now before the Minister of Town and Country Planning for his confirmation. If that area comes into the hands of the Corporation we propose to make it into a Memorial Garden contemporaneously with opening up the vista of St. Paul's from the East and thus retain that view now being seen from Cannon Street and thereafter to lease the remainder of the site for development in accordance with the City Plan for Commercial Purposes.

We get about a hundred applications for development in each month and in the last two years not one plan has been passed that is materially opposed to the Plan. The City is really going ahead and we do not intend to turn our backs on the responsibility we owe to posterity. I have pleasure in seconding the vote of thanks.

Mr. L. A. Wright [*A*]: Can Mr. Brett give us any idea on the economic practicability either of parking cars underneath roads or putting the pedestrian ways on top of cars? Is it feasible? What are the experts' opinions on vertical car-parking?

Mr. Michael Edmonds (*Student*, R.I.B.A.): I would like to thank the speaker very much for dealing with the psychological question of planning and this is the greatest stumbling-block we have had. A delegate at yesterday's lecture spoke of the meagre publicity given by the Press to the problems of architecture and I think we might press for more newspaper publicity about plans and thus put the public in the picture. They (the public) should be taught an intelligent appreciation of the work of town planners.

Moreover, so often plans are watered down until they are completely impracticable. They are nibbled here and chipped there in the interests of this and for the benefit of that by people who forget that once you start nibbling, the plan by its very nature is disintegrated as an entity.

Mr. Edwin Williams, M.B.E., M.A. [*F*]: It is very refreshing in these days of involved controls and building technique to hear someone who envisages a subject on broad lines. At first I thought Mr. Brett began on rather a mournful note when he reminded us that the fate of all plans is to become obsolete. It is not a mournful note to those who are or have been planners. It is a fact you must face and the real planner faces it joyfully. I am grateful to Mr. Brett for underlining the objective value of planning rather than the subjective, or superficial, value of planning. The enormity of the task of constructing or reconstructing whole city centres is fraught with a good deal of responsibility. Given the right architectural training, the organic approach is the one which is going to be the contributor to the best groundwork for future planning. Large plans—like Rome—can not be implemented in a day. The value of producing a plan at all is to explore the groundwork and to produce a plan whereby the best things can be selected or plucked out on realistic grounds. There is a lot of misunderstanding between the two opposing schools of thought, the imaginative and the realistic and each calls the other names. The realist scoffs at the imaginative plan and the imaginative artists weeps tears over the realist's plan. They are both labouring under a misconception because the imaginative plan is a long-term plan and the realist's must by its very nature be a short-term proposition.

Mr. Albert A. Pritt [*A*]: About the approach to planning, I note the general lack of stress upon the financial aspects. There is always great publicity given to the actual cost, in sterling, of schemes, but I have yet to see publicity given to what that cost is going to save in intangible assets. An effort should be made by economists to show what savings will be effected in human misery, the increasing values to life and limb and the elimination of nervous strain and stress upon the human beings who are to work in the new planned cities, to the increased productivity due to those savings and eliminations. I think if this kind of publicity were given, it would in great measure overcome lots of prejudice that arises in the minds of opponents of planning whose outlook centres itself chiefly in the cost and on how that cost will affect the interests of the individual owner.

Hon. Lionel Brett, M.A. [*A*]: Mr. President, ladies and gentlemen. I was relieved to find that the questions which were fired at me were less difficult than I had anticipated. I put almost everything I knew into my paper and had little to add to it. I was most encouraged by the realistic and optimistic note struck by Mr. Mealand in his remarks about the City of London's plan. But there was an element of contradiction between what he said and what another speaker said about the flexibility of planning. One said he had never departed one iota from his plan, the other that plans must be flexible and must not be adhered to rigidly. Plans must be flexible and yet the pride which Mr. Mealand took in his rigidity is right too. The right kind of flexibility is a periodic review by the planning authority. When plans become out of date they should become out of date deliberately and at the express dictation of the planning authority. They should not become out of date, as I fear the Greater London Plan has become out of date, through piecemeal nibbling away, through giving way to bad development, and through giving way to pressure.

One speaker asked whether cars should go below ground or whether pedestrains should go above. The site of course is important and it is difficult to be dogmatic. In a city like Bristol, for instance, valuable use could be made, and should be made, of two levels. Generally speaking, rather than put cars below ground level, it is more economical to put them up in the air.

I was asked whether I felt we ought to encourage economists to calculate the savings which result from good planning. The saving of lives which would otherwise be lost, the gain in production, pleasanter living and working conditions are factors architects have constantly in view, but I doubt the practicability of putting a price on them. I very much doubt whether we ought to put more emphasis on that aspect than will in any case be put by those whose business it is to work out the cost of things. Fine architecture and good planning are justified in themselves. If we say frankly that we mean to make a beautiful city we shall be better understood than if we say we are saving somebody's money.

As one speaker hinted, I may have sounded unduly mournful about Central Europe, but I feel that since I prepared this paper some weeks ago there are already signs that things are looking better in that part of the world. The despondency and the lack of vitality one noticed so much since the war, particularly in Germany, are ceasing to be such an obstacle in the way of constructive thinking. I believe that we too are going to have our chance quite soon.

Speeches at the Dinner

The President in the Chair

Clifton Suspension Bridge

The loyal toasts were formally proposed by the President, **Mr. Michael Waterhouse, M.C.**

Mr. A. Graham Henderson, A.R.S.A., President-elect, R.I.B.A., proposing the toast of 'The City and County of Bristol', said that when he had been entrusted with the honour of proposing the toast, he had received special instructions from a watchful secretary to be sure to say '*County* of Bristol'. He would obey the instruction. The responsibility of the toast, though great, was tempered by the fact that he had been credibly informed that when the Scots came South of the Border they were by custom allowed a certain amount of licence. He confessed it was his first visit to Bristol, but that did not mean he had not heard of the city's architectural gems. Nevertheless, something in the way of an anti-climax had descended upon his architectural insight when he had approached Bristol's environs from the railway and nearing Temple Meads with its ever-narrowing vistas of the intimate, ordinary things of life, he had become a little sceptical as to whether the architectural gems were all he should look for. To make these remarks, though in jest, was perhaps not quite cricket, because if there was anything calculated to make one shudder it was the approach to nine out of ten of England's cities by railway.

He also wondered why he should be standing proposing that toast to a city other than Glasgow—his own; but on careful reflection he could see many similarities between Glasgow and Bristol. They were both great ports. Bristol had perhaps gone back a little bit as a port but on the other hand Bristol could claim a very much longer civic history than Glasgow. Both cities had made it more difficult for themselves to play the role of port by being situated well up a river, a tricky obstacle to overcome. Of course the Clyde had got to stand or fall on its own reputation. It did so fairly well by allowing great ships far up the river, whereas Bristol had had to come to terms with bare facts and create a harbour at Avonmouth some miles away from the commercial centre of the city. The people of the Clyde could all-in-all rightly claim to have the mastery of the seas, but Bristol had undoubtedly the mastery of the air, as evidenced by that modern wonder the Brabazon air-liner. Bristol was very fortunate in that her industries were light, and therefore cleaner than those of Clydeside. Heavy industries played havoc with cleanliness and architecture, but Glasgow was trying to correct that, though heavy industries were the more difficult to handle architecturally. Light industries possessed another virtue. By their nature they created a more balanced employment and that was a most important thing in the development of a city. He did therefore think that Bristol was very fortunate and perhaps on reflection she was fortunate also in her reputation as a port. The prosperity of Glasgow had been earned to some extent at the expense of Bristol because Bristol had been the great centre for the tobacco trade and, after the Union with Scotland when Scotland had been allowed to trade with the colonies, Glasgow had proceeded to 'get her own back' by taking some of the trade from Bristol.

Every city and town at the present time was fraught with the traffic problem, and in Bristol's case it was peculiarly linked up with the damage done during the war, but in Glasgow, the traffic problem made itself known to a very marked degree. A sympathetic and proper approach to that problem was today one of the foremost thoughts engaging town-planners and architects. We were now planning mad, though by that he did not mean that planning was not an essential preliminary to construction. Serious planning must be done but he feared it had become a popular game. When starting a jig-saw puzzle, one was soon surrounded by delightful but unwanted friends who clustered round and handed one the missing pieces. There were too many friends looking round for the missing pieces of planning at the present time. It was primarily the job of architects to deal with the planning of cities. The city of Bristol presented nice problems to solve in the planning sense, but had an enormous advantage in having a not entirely flat centre, though when walking up and down the hills during the last three days he had not considered it an advantage at all. From an architect's point of view Bristol had tremendously fine vistas, and she had an extraordinarily good opportunity and one that should be seized to the full. He pleaded for the preservation of all that was beautiful and historic in the city. There were many historical buildings, and even some of the despised buildings of the Victorian era should be preserved.

The question of the 'County of Bristol' he left to the Lord Mayor to deal with if he thought fit. He wished the county well but he did not know exactly what it was. He was on delicate ground because Glasgow enjoyed the name of the 'County of Glasgow'. Glasgow had become a county by the ancient British system of becoming large enough to swallow lesser and non-complaining neighbours automatically and then, when too big decently to call itself a city, it became a county; he fervently hoped Bristol had become a county by some more honourable means.

He had the honour and pleasure of proposing the toast, and of congratulating Alderman Parish on becoming the Lord Mayor of the fine city of Bristol.

The Lord Mayor of Bristol (Alderman F. A. Parish, C.B.E.) responding, said he was much obliged to Mr. Graham Henderson for proposing the toast of the City and County of Bristol. Since meeting the conference members he had been struck by the very friendly spirit which prevailed. He much appreciated being present at such a conference. If only the friendly smile and symptoms of good fellowship could exist throughout Europe and the rest of the world, such as pertained at a conference of this nature, things would be much better for mankind as a whole.

For some years he had been associated with the docks of Bristol, and despite the proposer's remarks, there *were* docks at Bristol, and he had also been associated with greater docks at Avonmouth and Portishead, all of which belonged to the people of Bristol. Bristol's docks were some of the best in the country and, although it might be true that Glasgow's docks could 'show Bristol's a thing or two', he certainly did not admit either that they would not accommodate deep ocean-liners nor that their trade had become impaired by any of Glasgow's maritime activities, whatever they might be. Casualization and the various benefits of the Dock Labour Scheme had first been introduced in Bristol's docks, and he was credibly informed that Glasgow was still trying to understand how to operate it.

Everyone who lived in Bristol, whether true Bristolians or not, he thought it was true to say, loved their city, and they also had a very kindly feeling for her sister city of Bath. The happenings of the war had given Bristol a serious 'headache'. Bristol had lost some very fine buildings, particularly those in the old city, that were known and loved by all Bristolians and were admired by visitors. A heavy problem faced the city fathers of rebuilding much of the city centre. Since the war and during the last few years of it the city had concentrated in the main on building houses. The shortage of labour and of building materials, more so immediately after the war than today, had made themselves felt,

but Bristol was rather proud of the way in which her architects and professional men had made the fullest use of the labour and materials at their disposal; the benefits of their efforts and of the city's housing policy were now being seen in a gradual though marked diminution of the substantial waiting-list of Bristolians for houses. If, therefore, when visitors looked upon the city's scars and thought 'They have not done much rebuilding here', those people were recommended to go to the outer ring and to the suburbs. But the City Council had not by any means forgotten the city centre and its immediate neighbourhood, and when conditions and labour supply became less acute it was the Council's intention to re-build in such a way that the new Bristol would be worthy of the old, and one which would embody many features of which a city like Bristol, with its long history, must indeed be proud.

Mr. Michael T. Waterhouse, M.C., President, R.I.B.A., proposed the toast of 'The Bristol Society of Architects', and he said it was not only his duty but also a pleasure so to do. The reason for this toast was not merely because the Bristol Society of Architects was the host of the conference but because this year saw the celebration of the centenary of the Society's foundation. As to its history, he would not dwell upon it. It had been well and ably written by Mr. Lance Wright, and Mr. Wright deserved every praise for the researches he had made to enable him to do so. Mr. Wright's account of the Bristol Society of Architects, 1850-1950, printed in the Society's Centenary number of June 1950, was full of interest, and illustrated very clearly how much the history of a society like the Bristol Society owed to the vigour and personality of certain people. If he might refer to one or two such personalities he would speak first of Sir George Oatley. His character and the strength of his personality had made him well known and well loved. It was the President's regret that he had only come to know him late in life. The President had heard said of him what he considered to be the highest praise that could be bestowed upon an architect. He had been told by more than one builder in Bristol that he 'would sooner work with Sir George than any other architect'. He would also like to refer to G. C. Lawrence whom he remembered so well from his own early days on the R.I.B.A. Council. One still with us, and a friend of the President's since student days at the A.A., was Gordon Hake. He would call him the inspired master, more than that, the inspiring genius, of the great school of architecture of Bristol, a school of which he had always had fond admiration.

Not only was the banquet an occasion marking the Bristol Society's hundredth birthday, but it had a very special meaning for the President of the mother institute, because it was his own last public appearance as President at an R.I.B.A. gathering. They were now hearing the swan-song of his presidential post-prandial orations.

It was no secret that the location of a conference each year was a matter of much deliberation, albeit some good-natured haggling, and there existed rivalry between the societies throughout the country as to the chosen venue. Many and diverse were the reasons advanced by the contestants for the honour of entertaining the annual conference, but he must say that in spite of being in the presence of the civic dignitaries of Bath and Bristol, he believed no contest in the history of the R.I.B.A. had rivalled that between these two cities as to which place should be the true venue of this conference. Each put forward the claims of its antiquity, its capacity for accommodation, its charms, its world-wide renown. How they stood thus far in the race he did not presume to know, but when it came to advancing the claim of the number of things to which each city was proud to have given its name, the President said there was no doubt that Bath stood alone and supreme. Bristol could be acclaimed famous for two things, its shipping which went to the far corners of the earth, and for its 'milk'. The milk was not home-grown and came from strange cows, but the fame of its ships and the fashion in which they are maintained was world wide.

But Bath! What a galaxy of eponymous progeny! The Bath bun; the Bath Oliver; the Bath chair; the Bath brick; Bath stone; and Bath chaps.

There existed no real rivalry between Bath and Bristol, the heavenly twins which shone in the west, bright in concord. It was in the knowledge of this that the President said he would like to thank the Lord Mayor of Bristol for his cordiality and hospitality during the conference, and to thank the Mayor of Bath for that city's splendid reception of the members of the conference at the Pump Room. He likened the reception to the Queen of the West extending the utmost of her graciousness to the Mother of the Arts.

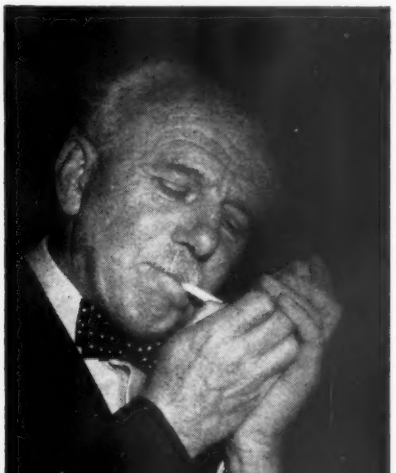
They would forgive him if he expressed his appreciation of the help and happiness which he had received by the presence of his wife during his two years of office. In the many visits they had made throughout the country during the last two years they had made many friends and received hospitality and affection which it was hard to put into words, but which nevertheless was deeply appreciated by Mrs. Waterhouse and himself. In those two years he had learnt at first hand more of the strength of the relations existing between the R.I.B.A. and the Allied Societies and their joint unanimity of purpose than in all the years in which he had been the Institute's honorary secretary and a vice-president. The loyalty existing between the R.I.B.A. and the societies, their common aim, their loyalty to the advancement of the profession of architecture had to be seen in travel properly to be appreciated. Certain critics of the Institute had in recent years implied that there was a tendency for the R.I.B.A. to become more and more like a jealous-minded trade union. He knew, however, that the loyal members of the R.I.B.A. shared a very much higher ideal. They believed, as he did, in the beauty of the architect's craft, and further that there was inherent in beauty something of the essence of the divine. Its manifestation on earth depended upon the medium of human endeavour. He appealed to architects to be steadfast to that creed.

The New Room, Broadmead, Bristol (1739). John Wesley's first chapel.

In his last speech as President, he wished to thank his many friends from the bottom of his heart for all that they had given to himself, to his wife, and to his family of friendship and affection, the memory of which would live as a treasure to them for the rest of their days. He thanked the Bristol Society of Architects for all they had done to make the conference the success it had been. Members of the committees, the sub-committees, the R.I.B.A. secretary and the R.I.B.A. permanent staff had all played their part down to the last detail, without which the conference would not have been a success.

Mr. R. S. Redwood [*A*] **(President of the Bristol Society of Architects)**, said he was deeply conscious of the honour and responsibility of replying to the President's toast of The Bristol Society of Architects, because he felt how meagre were his qualifications to do so. Venerable age was not infrequently accompanied by failing mental and physical powers, and while this was unfortunately true of some human beings he did not think it could truly be said of the Bristol Society of Architects, now in its hundredth year. The Society combined the experience of a century of life with the energy of youth. Its corporate aim was not so much the advancement of the Society itself as such as the education of the community in which it had its being towards an appreciation of the art of architecture. Who would deny in assessing the standards of a country's civilization that the achievements of its architecture must be taken seriously into account. Buildings were undeniably one of the chief instruments of civilization and the main background of man's daily life. He hoped that during the past hundred years the Society had shown itself to be ranged on the side of the angels

The Earl of Rosse addressing the Conference



Mr. G. D. Gordon Hake [*F*]. Principal of the Royal West of England Academy School of Architecture

and that it would continue to be so in the future. What was past was a prologue, and the centenary just past was but a prelude to the century on which the Society now embarked.

Mr. J. Ralph Edwards, A.R.W.A., F.S.A. [*F*], proposed the toast of the guests. For some three or four weeks he had been conscious of this privilege and increasing consciousness of that responsibility had been borne upon him by the arrival of some of the younger guests at the conference on 7 June. A friend of his had introduced a young architect to Mr. Edwards by preceding his remarks with 'Mr. Edwards is to be one of the speakers at the dinner on Friday'. The youthful member had spontaneously said two words. The first was 'Oh' and the second was 'dear'. He (Mr. Edwards) had taken this as a fortuitous hint to cut his speech short. Mr. Edwards referred to the distinguished top table guests and to distinguished professional colleagues from distant lands, including U.S.A., the Commonwealth of Australia and South Africa, and there were colleagues and visitors from North of the Border, from Ireland, and the nearer principality of Wales. The Bristol Society had laboured under difficulty in finding suitable accommodation for the banquet because many of the pre-war buildings most suitable for large gatherings had been bombed. He appreciated the recognition of the friendly atmosphere pervading the conference made by the Lord Mayor of Bristol and the President, R.I.B.A.

The Mayor of Bath (Miss Councillor Kathleen Harper) replying to the toast of 'The Guests', said that far from the conference members being indebted to the Bath Corporation for the civic reception at the Pump Room, the Corporation was honoured that the city of Bath should be chosen as a conference venue by architects. A conference gave to a city renewed life and to her citizens a common pleasure.

The Right Rev. The Lord Bishop of Bath and Wells, responding to the toast of 'The Guests', said that it was an honour to be associated in such a function with the Mayor of Bath, and he was sure they both appreciated the generous entertainment and delightful company.

Referring to Mr. Edwards, the Bishop said that he was at present carrying out a most intricate piece of architectural work for him in the City of Bath and, as all British people liked to do, he had taken the opportunity of watching Mr. Edwards at work, and had been inspired by the skill and ingenuity which Mr. Edwards had put into an unenviable and complicated task. Throughout his 27 years of ministry he had had increasing cause to be profoundly grateful to members of the R.I.B.A. They were the recognized channel which laymen used for getting their ephemeral ideas down to 'brass tacks' and lasting value. Architects served the church well, and he thanked them in general not only for what they did but the way in which they did it. He thought it no mis-statement to say that the church was a most important patron of architecture, and he was certain that the church and all it stood for throughout the ages had provided architects with the greatest opportunities for practising their art. It was his happy privilege to be bishop of one of England's most lovely ecclesiastical buildings and to live in one of England's most beautiful bishop's houses. He valued the heritage, but there would have been no heritage to value had it not been for the ideals, the forethought and the skill of the architects. In a realistic age, certain hints, certain underground 'feelers' had been put out that the Bishop's Palace at Wells would make a suitable hospital, institution or similar building and that he could live in a smaller house; but if ever those sentiments saw the light of official day, he would not waver in denying them being, because if he did so he would be a traitor to the past, to the cause of English tradition and to the heritage of the ancient City of Wells.

During the past 10 or 15 years architects had felt something akin to frustration in the exercise of their ancient and honourable profession. It did seem to him that constant work that was utilitarian in character must militate against enterprise in ideas and that an essential part of the equipment of the mind of any architect had been strangled and not been allowed exercise. It had been his experience that clouds however dark, eventually passed away, and he hoped it would not be long before the architect's craft was set free once again.

Mr. Ernest F. Tew [*A*] of Bath, and Mr. R. S. Redwood [*A*], President of the Bristol Society of Architects

L. to R. Lt.-Col. Eric Cole [*F*], President of the Gloucestershire Architectural Association; Mr. E. H. Button [*F*], of Bristol; Mr. T. H. B. Burrough [*F*], of Bristol

Australian members of the Conference. L. to R. Mrs. G. G. King, Lt.-Col. J. C. Irwin, Mrs. Irwin, Mr. G. G. King and Mr. J. L. Stephen Mansfield (*Photos: Architectural Press*)

Building in the Tropics

Research into Housing in Tropical Countries, especially in the Commonwealth*

By G. Anthony Atkinson, B.A. (Arch.) (Hons.) [*A*], Colonial Liaison Officer, Building Research Station, Department of Scientific and Industrial Research

Read at a Meeting arranged by the R.I.B.A. Architectural Science Board, 18 April 1950

R. J. Gardner-Medwin, B.Arch., Dip.C.D., A.M.T.P.I. [*A*], in the Chair

Introduction. Two years ago the late Sir Frank Stockdale, then Adviser to the Colonial Officer on Development Planning, read a paper to this Institute on *Recent Planning Developments in the Colonies*.† Our chairman tonight, Mr. R. Gardner-Medwin, and Mr. L. M. de Syllas described, in greater detail, their work in the West Indies. What I am going to say is complementary to these papers—for a large part of the Colonies lie in the tropics and, as Colonial Liaison Officer at the Building Research Station, my first interest is in Colonial building. In the time at my disposal it will only be possible to discuss some of the more important problems of tropical building and suggest some tentative solutions. I will also list some of the problems which need study and review some of the facilities available for building research.

The special features of tropical life which affect building most are the climate and, in all but a few places, the relatively backward state of social and economic development. It may therefore be said that tropical building differs from that in a more temperate climate in four main ways: (1) The problems of thermal comfort, and allied physical problems like those of natural lighting, are different; (2) Building materials and equipment do not necessarily behave in the same way. They are more liable to deterioration through the action of strong sunlight, high temperature and humidity, mould growth, insect attack, etc. There is little or no risk of frost. Generally, in the humid tropics, periods of strong sunlight alternate with torrential rain. The problems of moisture penetration are therefore likely to be different. They are certainly very different in the dry tropics. (3) Because of the relative backwardness of social and economic development, and because of the variety in social organization, building needs, and the means by which they are satisfied, are different. Generally speaking, buildings have to be simpler and cheaper. (4) In some parts of the tropics there are few, if any, local building material industries. Materials are made by handicraft methods, or have to be imported. There are too few technicians and skilled artisans, and local training facilities are scanty. There are also few experienced and well-equipped local contractors. In rural areas especially, builders are comparatively unskilled, or skilled only in traditional local techniques.

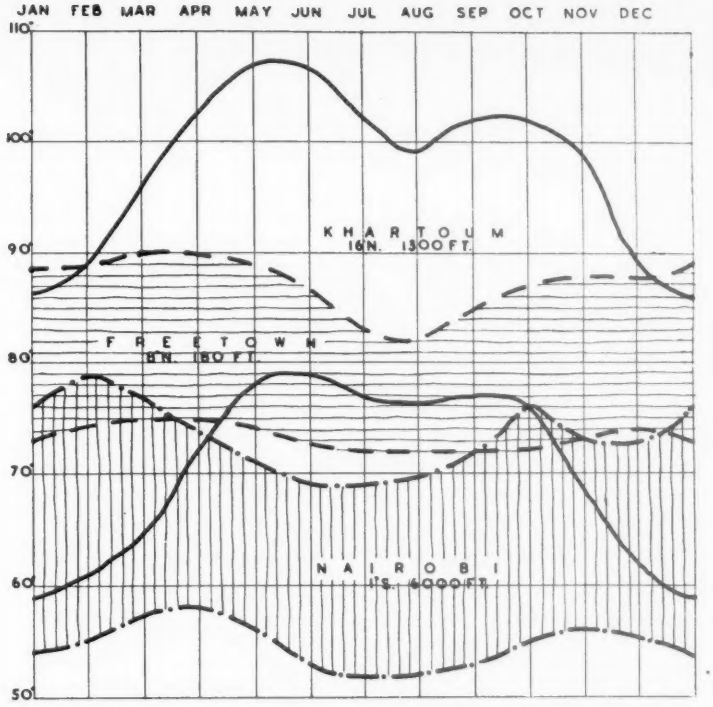


Fig. 1: Mean monthly maximum and minimum temperatures for a hot, dry (Khartoum), a hot, humid (Freetown), and an upland climate (Nairobi)

The relative importance of these differences depends, of course, on local circumstances. It is obviously not possible to talk in detail about all the problems involved. I am, therefore, going to talk at some length about the design of buildings for comfort and then discuss more briefly a few of the other problems.

Tropical climates.* What is really meant by 'the tropics'? The simplest definition is that they lie between Cancer and Capricorn (23½ degrees north and south of the equator). This is a definition based on the altitude of the sun, not the only factor in building design. Temperature, humidity and wind each have a part to play, and of these, it seems to me, temperature is the most important—the greatest single characteristic of a tropical climate is that it is hot. One such temperature classification shows a hot, or tropical, belt lying between the two mean annual isotherms of 68 degrees F. I do not claim that it gives a necessarily correct definition of 'the tropics'; but it is simple and includes those countries where, for the greater part of the year, buildings serve to keep their occupants cool rather than warm.

There are, of course, many kinds of tropical climate—depending on such things as latitude, proximity to the sea, altitude and seasonal winds. Again I make no pretence to give you a comprehensive classification, but, from the standpoint of building design, we can take it that there are three basic tropical climates—the very hot and dry; the hot and humid; and the cooler, upland climate.

Hot, dry climates, like that of Khartoum (Fig. 1), are characteristic of the Trade Wind belts. Here, and not close to the equator, occur the highest temperatures—at noon, 110 degrees F. and more in the shade—and here, also, the greatest daily range of temperature—often of more than 40 degrees F. They are the sunniest parts of the earth—perhaps the only parts where, by common consent, there is too much sun. Strong sunlight, very hot days and cooler nights, dust storms, low relative humidity and little rainfall—these are the characteristic features of the hot dry climates. They are, of course, subject to seasonal variation.

In contrast, the seasonal variation of climate in a hot, humid zone, like Freetown, is slight—except where monsoon conditions prevail. The difference between the mean temperatures of the warmest and coolest months may only be about

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† R.I.B.A. JOURNAL. 3rd Series, Vol. 55, No. 4, p. 140-148. (Feb. 1948.)

* For a detailed treatment, see *Climatology*, W. G. Kendrew, O.U.P., 1949.

5 degrees F. The mean daily range may be 10 degrees F. to 15 degrees F. Shade temperatures only occasionally exceed 90 degrees F. but, because of the humidity, are more unpleasant than the higher temperatures of the dry tropics. Overcast skies, particularly in the afternoon, hot days and only slightly cooler nights, high relative humidity and heavy rainfall—these are the characteristics of a hot, humid climate.

With increased altitude the sunlight tends to become stronger and the loss of heat at night more rapid. The characteristics of an upland climate, like that of Nairobi, are strong sunlight and a large daily temperature range, especially in the clear rainless weather of the dry season, fairly high day temperatures but cool, or cold, nights, sometimes even a ground frost.

Man's physiological behaviour in a hot climate.* Except in the most unusual circumstances, a man loses heat to his environment; in all circumstances he generates heat. When this heat is lost faster than it is produced he feels chilly; when it is produced faster than it is lost, he feels warm. The body, however, adjusts itself to these changing conditions and the equilibrium between heat lost and heat produced is restored. Over a narrow range of temperature, no appreciable adjustments are necessary and there is thermal comfort. This comfort zone depends on how active a person is, what clothing he is wearing, and how used he is to the particular environment.

Below about 78 degrees F. a lightly-clad man, resting indoors, loses more and more heat by radiation and convection. He feels cool or cold. Between 78 degrees F. and 84 degrees F.—the comfort zone for these particular circumstances—the heat lost through radiation and convection, and by breathing and insensible perspiration, just about balances that produced by the body. Above 84 degrees F. the loss through convection and radiation is no longer appreciable—above about 93 degrees F., the normal skin temperature, there is an actual gain in heat. To keep cool the body must lose its heat by the evaporation of sweat. In a dry atmosphere evaporation is easy, and the sweat does not become visible on the skin; but in a humid atmosphere evaporation is difficult and the sweat appears visibly on the skin in large droplets. Air movement across the surface of the skin, however, assists in the evaporation of sweat, and therefore the cooling of the body. This, of course, explains why we find a hot, dry atmosphere more pleasant than a hot, humid one and why, in a humid atmosphere, air movement is essential for comfort. To illustrate this point, let us compare the dress of an Arab—inhabitant of a hot, dry climate, with that of a Negro—inhabitant of a hot, humid one.

The Arab's white robe not only protects him from the sun's radiation but provides good insulation against the intensely hot desert air, and against the cold nights. When he moves, the billowing of his robe allows a moderate, but controlled, amount of air to circulate next to the skin; the intermittent contact of garment and skin, moreover, affords a larger wetted surface (skin plus gown) from which sweat can be evaporated.

The Negro, on the other hand, needs little clothing for comfort. The normal temperature range of the humid tropics, where he mainly lives, lies between about 83 degrees F. and 88 degrees F.—the comfort zone for a naked, inactive man. The sun shining through the humid atmosphere is less intense, and there is usually plenty of shade. To keep cool while doing any hard work he must sweat profusely. Clothing only impedes the flow of air over the skin.

Design for comfort.* Let us turn from man to his buildings. Without resort to air conditioning it is possible, through correct design, to increase substantially the comfort in a tropical building. Comfort, as we have seen, depends on the temperature, humidity and movement of the air, and on the temperature of the surfaces to which the body is exposed. Let us look at these factors one by one. It is not usually practical to reduce humidity. Air movement depends on the design of a building and can be controlled. We can not reduce the air temperature in a room unless we allow the air to pass over a cool surface or be displaced by cooler air; if it passes over a hot surface, or is displaced by warmer air, its temperature will rise. Hot surfaces not only warm the air, but, if they are hotter than about 93 degrees F., will also warm the body by radiation. The cooler they are below this temperature, the easier it is for the body to lose its heat and, in a warm climate, to keep comfortably cool.

First, therefore, as far as possible precautions should be taken to avoid heating-up the air before it enters a room. Secondly, the inner surfaces should be as cool as possible—they should be at least as cool as the shade air temperature. These two principles apply to all tropical building, but their application, as we shall see, is very different in hot dry and in hot humid climates.

The kind of house in which our Arab might live would have thick walls and small openings to protect him from the heat of the day, and a flat roof on which to sleep at night. Contrast this with a building in the humid tropics. Here air movement is essential for comfort, and it is preferable to let the outside air pass through the building during the day; so openings are large, and walls are often built of materials through which the air can pass—such as grass matting. In this kind of climate, the daily temperature range is generally small, and there is not much cooling at night, so inside surfaces can not be reduced below the average shade temperature and there would be little advantage in making the walls thick.

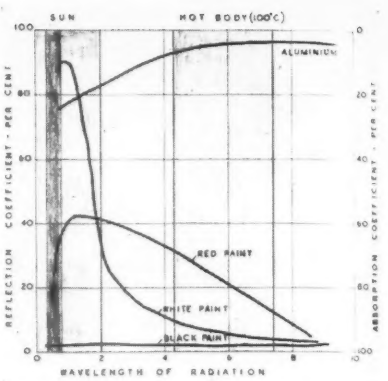

Fig. 2: The reflection of high temperature, short wavelength radiation by white, red and black paint and aluminium

Let us now look in greater detail at these requirements for keeping cool. The broad principles are known, and it is possible to say what will be the general effect of certain treatments. But we can not yet say, with any degree of accuracy, what will be the quantitative effect of a particular form of construction on comfort conditions, although there is a certain amount of information available which can serve as a useful guide. Neither do we know very much about the relative importance of the different factors which influence the ways in which a building can be kept cool. It is, therefore, not yet possible to compare thermal efficiency with the cost of providing it, as we can do for heated buildings in cool climates. Research into these problems, as I will describe later, has been started in a number of countries.

It should be emphasized that the problem of the natural protection of a building against solar heat is completely different from that of insulating it against winter heat loss. In the latter case the heat is obtained from an artificial source and the inside air temperature is well above that outside. Only when there is an artificial cooling source—such as air-conditioning—are the problems of summer cooling and winter heating comparable and thermal insulation is, by itself, important; for without artificial cooling it is not possible to reduce the air temperature inside a building below the minimum night air temperature outside. The problem is therefore one of keeping the inside temperature as near to this minimum as possible and not allowing it to rise to the maximum outside temperature in the sun.

Light coloured surfaces. When solar radiation falls on an opaque surface, part is reflected and part absorbed. Light colours and shiny metal surfaces reflect most radiation—white paint as much as 80 per cent. Dark colours, however, reflect very little. The rest of the radiation is absorbed. It is converted to heat and the material warms up. The warmed surface emits low temperature (long wave) radiation and thus gets rid of some of the energy which it has absorbed. The rest heats up

* For further details, see *Temperature and Human Life*, by C. E. A. Winslow and L. P. Herrington, O.U.P., 1950, also *Basic Principles of Ventilation and Heating*, by T. Bedford, H. K. Lewis, 1948.

* For references, see Department of Scientific and Industrial Research, Building Research Station, Library Bibliography, No. 142, *The Design of Building for Warm Climates*, February 1950.

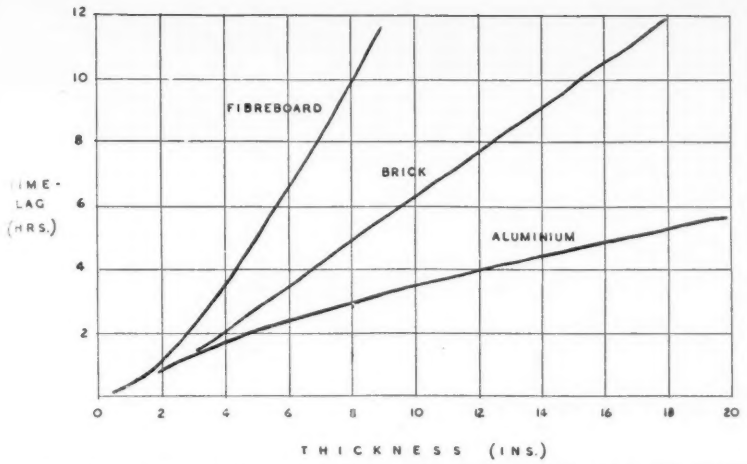

Fig. 3: The relation between time lag and thickness for three materials; fibreboard, brick and aluminium

the structure. Most building materials, irrespective of colour, easily emit low-temperature radiation. Shiny metal surfaces, on the other hand, do not; they therefore can not re-radiate the heat so easily as can a painted surface, so that on the outside of a building a white paint is better than shiny metal such as aluminium. On the inside, however, we do not want the material to emit its heat and a shiny metal surface is best. This was shown in a series of experiments carried out at the Building Research Station before the war. A tin-plate sheet, painted white on the outside and left shiny underneath, was found to be 100 per cent effective. It was 86 per cent effective when neither face was painted, but only 60 per cent effective when the underside was painted white, and the top surface left as shiny metal.

Fig. 2 shows how white paint and aluminium behave with different kinds of radiation. It should be noted that, for the same wave length, good absorbers are good emitters, and *vice versa*. So we see that we can reduce the amount of solar radiation absorbed by the walls and roof of a building by using outside surfaces of a light colour. By keeping the structure cool we shall keep the inside surfaces cool, and therefore improve comfort conditions.

Time-lag. As an Arab building shows, in a hot dry climate it is possible, by using a thick structure, to ensure that inside surfaces are coolest during the heat of the day. This is because the regular succession outside of high temperatures by day and low temperatures by night constitutes a periodic temperature variation which gives rise to a corresponding variation at the inner surface of the structure. These temperature changes at the inner surface occur later in time and are smaller in amplitude than the changes which produce them. For a homogeneous structure, both the time lag and the amplitude depend on several physical properties considered jointly, namely, the thermal conductivity, density, specific heat and thickness of the material. The relationship between these quantities on one hand, and the amplitude and time lag on the other can be determined from tables which are the result of American research.*

Fig. 3 shows the 'time-lag' of three materials—brick, fibreboard, and aluminium, for different thicknesses. By suitable choice of materials and thicknesses we can ensure that minimum internal temperatures occur during the day and maximum internal temperatures during the night, and also that the amplitude of these changes is considerably less than the amplitude of the external variations which produce them. The actual time lag which is required depends, of course, on the time of day the room is going to be used, and the time of day at which the outside surfaces are hottest.

Fig. 4, also based on American research, illustrates another example.† The walls have similar insulation values but very different thicknesses, one being a 16 in. solid brick wall and the other a 1½ in. cellular glass wall. (This last was chosen on account of its extreme lightness and high thermal resistance.) You can see how rapidly the inside surface warms up as the sun shines on the thinner wall—by three o'clock in the afternoon it has reached 93 degrees F. As the sun sets, however, the thin wall cools down, and by midnight the temperature has dropped to 84 degrees F. Compare this with the thicker wall. It takes a long time to warm up, so the inner surface is hottest at four o'clock in the morning. It also takes a long time to cool down, so the inside is coolest at four o'clock in the afternoon. The variation in temperature is also slight—less than 3 degrees F. compared with 10 degrees F. for the thin wall. Obviously the thick wall is best for rooms used during the day, and the thin wall for rooms used at night. The ideal building for a hot dry climate, one might say, is a thick-walled mud hut for the day and a tent for the night.

* *Periodic Heat Flow—Homogeneous Walls and Roofs*, by C. O. Mackey and L. T. Wright, Jnr. Heating, Piping and Air Conditioning, Vol. 16, No. 9, p. 546-554 (September 1944.)

† *Summer Comfort Factors as Influenced by Thermal Properties of Building Materials*. C. O. Mackey and L. J. Wright, Jnr. Heating, Piping and Air Conditioning, Vol. 14, No. 12, p. 750-7. (1942.)

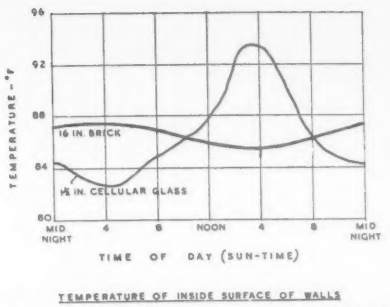

Fig. 4: The temperature of inside surface of west walls of air-conditioned building. (Indoor air temperature constant at mean equivalent outdoor temperature)

Shading. The object of shading, which is complementary to the use of light-coloured surfaces, is to prevent the outside of a building from absorbing the direct heat of the sun, and so to keep it down to shade temperature. The most effective way of doing this is with a thin canopy or sun-shade, painted white on its upper surface. It then reflects most of the sun's heat, and also cools down rapidly when no longer sunlit. A thick sun-shade, on the other hand, stores up the heat and so cools down more slowly. It itself produces a time lag so that its under-surface starts to emit heat to the wall and roof surfaces which it is supposed to protect long after they would otherwise be cooling down. It also heats the cool night air passing over it on its way into the building. This in fact is what happened with some of the Brazilian buildings where sun-shades, or 'brise-soleil', of concrete 2 in. or 3 in. thick, have been used to protect windows. It would have been better if they had been made of a lighter, thinner material, such as sheet metal, asbestos cement, wood or, as in Fig. 5—

Fig. 5: Light sun-shade of split bamboo; office block, new legislative assembly building, Khartoum

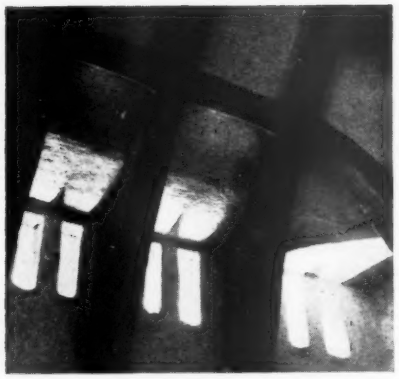

Fig. 6: Strong sunlight reflected from the ground lights the arched and coffered ceiling of a house at Kano, N. Nigeria

the office block of a new legislative assembly building in Khartoum—of split bamboo.

In order to shade walls of single-storey buildings, especially those facing north and south, wide overhanging eaves can be used. But on the east and west walls, and with many-storey buildings, other methods are necessary, such as verandahs, horizontal and vertical fins (which may or may not be adjustable) and the judicious planting of vegetation.

Roofs present a slightly different problem. Again the sunlit surface should be as light in colour as possible. Generally speaking, some kind of double roof is necessary; either the ceiling being shaded by the roof covering or the roof slab by a 'parasol' treatment. The shading element should again be of thin construction and the space between it and the ceiling or roof slab well ventilated.

We have seen that the principle of shading is most important in hot, humid climates where we can not reduce the inside air temperature below outside shade temperature. The effect of shading a thick structure is different. It will reduce the outside surface temperature during the day and will, therefore, reduce the inside surface temperature at night. But it will not, of course, affect the inside daytime temperature. Shading will be useful when the room is to be used at night as well as during the day—but it will not be as effective for night time use as a separate, thin structure.

Daylighting. In the tropics, sky conditions may be different from those in Great Britain, and so daylighting studies developed here may not be directly applicable. In the dry tropics, the sun is strong and the sky often cloudless—deep blue in colour except when made hazy by dust or the smoke of bush fires. There is little vegetation and the ground is therefore light in colour. In the humid tropics, on the other hand, the sun is less strong and the sky often cloudy or overcast. Vegetation is luxuriant and the ground green or earth-red.

A blue sky, by itself, diffuses relatively little light; a cloudy or overcast sky, especially during the middle of the day, is much brighter.* The direct sunlight is, of course, brighter still, but it is usual to prevent it from shining into a building. In the dry tropics, the light-coloured ground reflects a great deal of light and may, as a result, be nearly ten times as bright as the blue sky above. The ground, and surrounding sunlit buildings, are in fact the main light source. In the humid tropics the main source is the bright, cloudy sky. In both cases for good lighting the same principle should be followed—to screen from direct view the bright source of light, ground or sky, and so enable the eye to adapt itself better to the general level of illumination—but its application will not be the same because one light source is the reverse of the other and because of other design requirements.

In the humid tropics the bright, cloudy sky is the principal source of light, and the problem is to reduce the glare caused by the contrast between it and the comparatively dark interior of a building. The best way of doing this is to cut out the direct view of the sky, by louvres, for example, which may be adjustable.

In the dry tropics, the sunlit ground being the main source of light, it is the view of the ground which must be screened. This can be done by raising the window sill above eye level or by screening the lower part of the window. With the ground as the main source of light the ceiling is the brightest part of the room. For this reason ceilings are often richly coloured and decorated. It is a form of lighting capable of producing most interesting architectural effects as the Egyptians and, after them, the Arabs have shown. (Fig. 6.)

Other factors which help to reduce glare are deep window reveals, large openings and cross-lighting. In the humid tropics, large openings and cross-lighting are usual, because they are also necessary for air movement and cross-ventilation. But in the dry tropics windows are traditionally small, mainly for protection against the heat. However, this is compensated to some extent by deep window reveals and by the more even diffusion of light by the ceiling, which, as we have seen, is the main source of light in the room.

Design requirements. Let us sum up the requirements of building for comfort in the three basic tropical climates.

In a hot dry climate, the entry of hot air from outside during the day is undesirable. For rooms used in the daytime, the walls are thick and the windows small. Windows are closed and screened to keep out the heat, and at night are opened to cool down the building. (For protection against the sun's heat the screening element should be on the outside of any glazing.) Direct sunlight being excluded, the ground is the main source of light. To reduce glare, the view of it is cut out by screening or by window sills above eye-level. For rooms used only at night a thin structure which cools down rapidly is preferable. Alternatively, if a thick structure must be used at night, the walls are best shaded by thin sun-shades. Outside surfaces are light in colour and buildings face north-south so as to prevent long stretches of east or west wall being subjected to the nearly horizontal rays of the sun. The surface area exposed to the sun is kept as small as possible and benefit is obtained from mutual shading of buildings.

In a hot, humid climate the prime object of design is to provide free air movement through the building and to prevent the temperature of its inside surfaces rising above shade temperature. To obtain the greatest benefit from air movement on days when there is only a slight breeze, orientation in its prevailing direction is a first consideration. It may, at the same time, be possible to obtain protection against squalls and driving rain. Openings are large to allow as much air movement as possible. They are protected by canopies or verandahs so that they can be kept open for ventilation when it is raining. There is ventilation at ceiling level and sills are low so as to allow the movement of air across the occupants of a room when seated or in bed. Dead-air pockets on plan, as well as in section, are eliminated and to obtain cross ventilation buildings are one-room thick. The sky is the main source of light and to reduce the glare caused by it when cloudy and bright its view is screened by louvres or similar means.

Walls and roof are of thin construction, for thick construction gives little benefit during the day and is of some disadvantage at night. Both walls and ceiling are shaded, and advantage is taken of the shade provided by trees and vegetation so long as they do not restrict air movement. Sun shades and similar methods of protection are also thin, so that they do not store heat and emit it at night, and surfaces exposed to the sun are light in colour. (Provided the roof space is well ventilated, the type of roof covering and its pitch may have little effect on internal comfort.)

In an upland climate, where there is a large daily range of temperature, the time lag of a structure is useful and, when it becomes cool at night, we are glad of the heat which has been stored up during the day. At higher altitudes and during the cool season we may even require a fire. Ceiling insulation will be of use in preventing the rapid loss of heat to the sky at night. Seasonal variations make the problem of design for upland climates more difficult. Verandahs may be necessary for the more humid, wet season, together with larger openings and some form of cross ventilation. It may also be necessary to screen a bright sky from view indoors. Generally, however, the kind of buildings which we find in this climate do not differ

* Measurements made in the Transvaal, South Africa, give average illumination intensities (on a horizontal plane shaded from direct sunlight) of the order of 600 to 750 foot-candles with cloudless skies and 1,100 to 1,400 foot-candles with overcast skies. In the direct sunlight illumination intensities exceeding 11,000 foot-candles were measured. This means that with a 50 per cent reflection coefficient—such as occurs with a sand-coloured ground—the illumination intensity of light reflected from the ground may be of the order of 5,000 to 6,000 foot-candles. (*Solar Radiation Survey*, J. J. Richards, Department of Agriculture, Pretoria, South Africa), 1948.

very much from those to be found in the warmer parts of the British Isles—fairly thick walls, some ceiling insulation, moderate window openings which can be shaded, a verandah, and some form of heating, usually an open fire.

Research into hot-climate design. Though I have been able to suggest a number of things which should be taken into account when designing buildings for hot climates, there is, as I have already said, a lot more to be known before we can compare the relative efficiency of the various ways of keeping a building cool. This is, of course, most important when we start to think about economical building, for the sort of thing we want to know is whether the cost of an extra foot in ceiling height is worth while. Such a question can only be answered when the problem has been investigated in an organized, or scientific way.

The problems fall into three groups. First, there are those concerned with climate—such as what is a suitable climate classification from the standpoint of building design. This is the province of the climatologist, but it is up to us, as architects, to pose the question and suggest the form in which the answers would be most useful.

Second, there are the problems concerned with man—such as what are the comfort zones for different types of men in different kinds of climates. Here we must seek the guidance of the physiologist, though again we can help by posing the questions and suggesting the kind of answers which have a useful, practical application. Much research during the last war was concerned with problems of hot-climate physiology, but most of it dealt with extreme conditions when heat exhaustion and collapse are imminent. We are interested in the less clearly defined problems of comfort over long periods in ordinary tropical, or summer, conditions. In this field, the most important experimental work has been carried out in the United States. It mainly relates to the problems of summer cooling by air-conditioning, but has a wider application. In Nigeria, Dr. W. S. Ladell is carrying out a programme of research for the Colonial Medical Research Committee, using both West African and acclimatized European subjects. The Australian Commonwealth Experimental Building Station is also carrying out physiological studies.

Lastly, there are the problems directly concerned with building. Except for the work in the United States on problems of summer cooling, mainly sponsored by the American Society of Heating and Ventilating Engineers and related to air-conditioned buildings,* there has, until recently, been little co-ordinated scientific research on the design of buildings for hot climates. When building research organizations were set up in Australia and South Africa a few years ago, the need for such work was apparent. It has received a great deal of attention by Mr. J. W. Drysdale, at the Australian Commonwealth Experimental Building Station, and by Dr. A. J. A. Roux, at the South African National Building Research Institute. Their experimental work is still progressing. It is mainly related to building in upland and moderately dry, hot climates, but much of it is of general application. Here in Great Britain, the Building Research Station's programme of full-scale house-heating research is being extended to include a study of thermal capacity. This is primarily from the standpoint of winter heating, but should provide data for the study of summer cooling as well. Though the experimental techniques being developed here are applicable, most of the research on hot-climate building design must of course be carried out in the tropics. I myself consider that if we want quantitative information which can be applied to low-cost tropical building, it will be necessary to carry out experiments with full-scale buildings. This would be a task of considerable magnitude, but the results so obtained would make it well worth while.

* This is summarized in the current edition of the A.S.H.V.E. Guide.

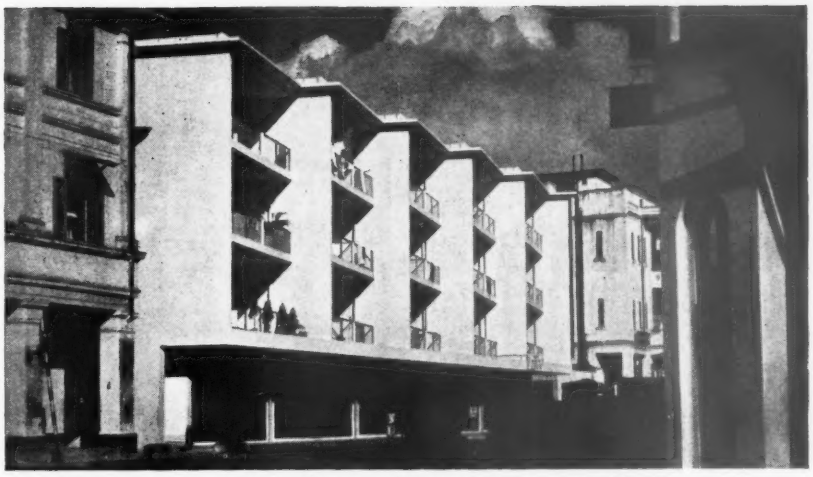

Fig. 7: Tenements, Albert Street, Singapore. (Singapore Improvement Trust)

Building Needs: Housing. Today's building needs arise out of the development of a large part of the tropics as colonies or economically dependent territories, as a result of which their whole economy has changed quite rapidly during the last hundred years or so. Large centres of populations have grown up, and are still growing up, round seaports like Lagos and Kingston, Jamaica, round the mines like those of the Rhodesian 'copper-belt' and round administrative and trading centres like Nairobi. As a result the biggest building need is to provide sufficient satisfactory low-cost housing for the rapidly growing urban population and, at the same time, to improve rural conditions. Employers in many places, particularly on mines and estates, have had to house the greater part of their labour. In the past the housing was usually of the barest minimum, and no provision was made for families, who remained in the country. This is now changing; standards are being raised, and larger houses are being built for the families who follow their menfolk to the centre of employment. In the towns serious overcrowding has resulted from the rapid increase in population, and there are a large number of casual or self-employed workers who are unable to build or acquire decent houses of their own. They are forced to rent rooms often at inflated rents in insanitary dwellings, or to squat on unoccupied land. This has meant that most of the governments in tropical countries—certainly of the British Colonies—have had to take a direct and growing interest in low-cost housing and in the lay-out of their towns. Housing and planning legislation has had to be enacted, or brought up to date, and housing authorities set up. To an increasing extent housing and planning are becoming closely associated—a development which is to be welcomed, if only because one of the most important factors in housing is good lay-out.

In some of the larger towns, especially on island sites like Singapore, Mombasa, and Hong Kong, flats are being built which set interesting problems for the architect and the planner. Fig. 7 shows one of the more recent blocks of flats built by the Singapore Improvement Trust to relieve congestion in the central area of the city, which has an average density of about 300 persons to an acre. Hong Kong has even higher densities.* Sir Patrick Abercrombie in his preliminary planning report mentions an extreme but not unusual case of 2,270 persons to an acre. He discusses the possibility of replanning at 500 persons per net acre, but suggests that such a standard should be tried out in an experimental area before being adopted generally.† Problems like these merit the most serious study—and require the boldest solutions.

* *Hong Kong. Preliminary Planning Report.* Professor Sir P. Abercrombie, 1948.

† For the central area of London, Abercrombie and Forshaw in their plan suggested a net density of 200 to an acre.

Standards. Government concern in low-cost housing has led to an increased interest in space and accommodation standards. Basic minimum standards are necessary in order to safeguard public health and also to provide certain standards of privacy and comfort. The space standards adopted are, by English standards, low—for example, 40-50 sq. ft. per person is in many cases usual for new housing, and living-rooms are used for sleeping. This is not so serious as it may at first sound, as in a warm climate one lives much more out of doors.

Though space standards can not in practice be increased very much until the overall level of overcrowding is lessened by a sufficient volume of building, much can be done to ensure that the various standards are related to each other, and to the social needs of the people. For example, standards usually specify the minimum area of rooms and a minimum ceiling height. To increase these while continuing to build one or two-roomed houses would not be popular where three small rooms, giving increased privacy, might be much preferred.

Existing standards may also not be related to the climate, or to desirable comfort conditions. For example, the requirements for ventilation seem to vary very much, but are little related to the dryness or humidity of the place and do not appear to have any scientific foundation.

There is need for research into desirable standards related both to different climates and to the different ways in which people live. Much more can also be done by good design.

Building Technique. The techniques of building in the tropics have developed from two separate origins. There are, first, the traditional local techniques handed down from one generation of builders to the next—like those of the mud-builders of Northern Nigeria—the fruits of hard experience, flavoured often with superstition. Secondly, there are the imported, mainly European, techniques which evolved under quite different circumstances, were applied to tropical building with a varying degree of understanding, and have been modified through practice—a process which continues collectively, and in the personal experience of everyone trained overseas who comes to build in the tropics. Occasionally, as in the new African housing in Zanzibar, the two techniques are to be found side by side in the same building. (Fig. 8.)

Science can assist in both these developments. It can seek out the rational and useful in traditional building, and can also show more clearly the differences between building in Europe and in the tropics, thus enabling the builder to interpret his experience more intelligently. I would like to illustrate this point by talking, for a few minutes, about one of the oldest of all building materials—earth.

Earth Building. Wherever man farms, where the climate is at all favourable and suitable earths are to be found, there the craft of building with earth flourishes. Its principal advantage is that it uses materials already on the site. It does, however, involve quite a lot of manual work, and only provides part of the whole building—usually the walls, possibly also the floor and roof. It is, therefore, of greatest value where the means of transport are poor, unskilled labour is plentiful, and the shell of a building is still the most important part of it. For these reasons, earth building, despite the attempts to revive it, can have very limited application in Britain, but is still particularly suitable for building in many parts of the tropics.

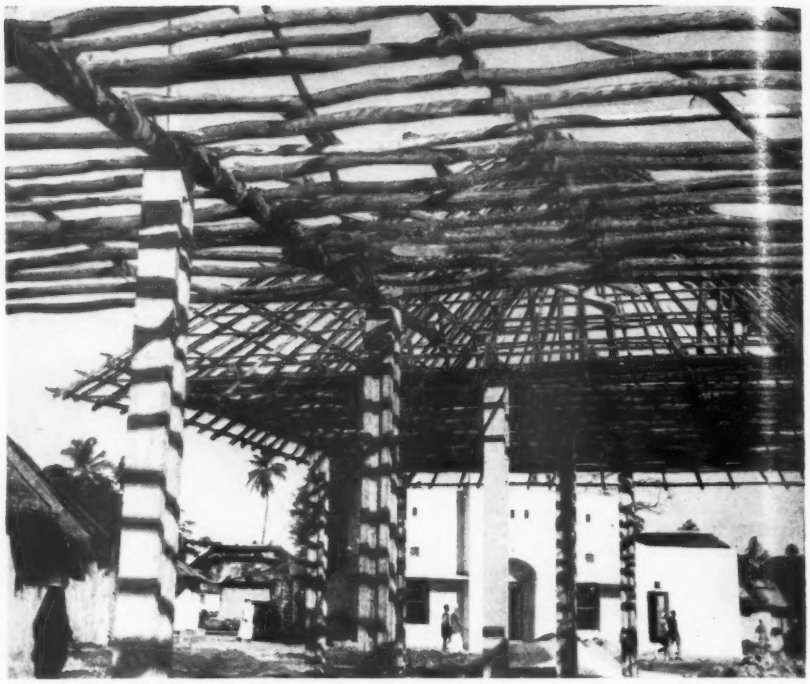

Fig. 8: African housing, Ngambo, Zanzibar. A traditional mangrove-pole and thatched roof built on r.c. posts

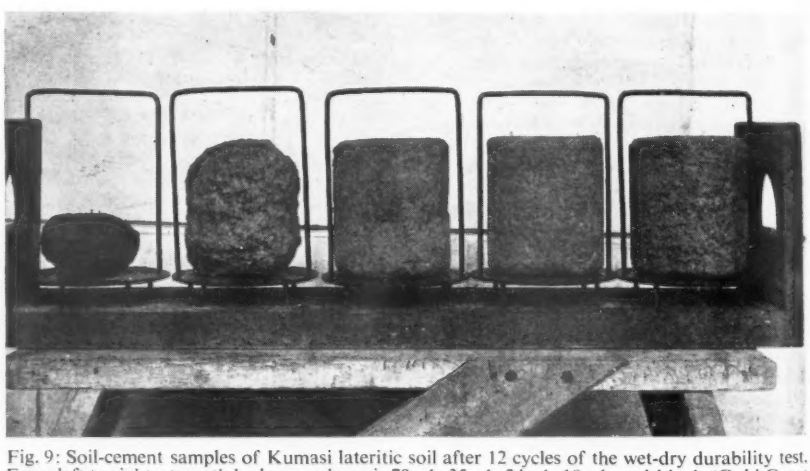

Fig. 9: Soil-cement samples of Kumasi lateritic soil after 12 cycles of the wet-dry durability test. From left to right, strength by loose volume is 70 : 1; 35 : 1; 24 : 1; 18 : 1, and 14 : 1. (Gold Coast Town and Country Planning Board Laboratory, Accra)

Earth building takes on many forms. The most common is wattle-and-daub, in which a pole and brush-work frame is used to support the earth which, consequently, may be of poorish or variable quality. Other ways of building-in-place include cob, where fairly wet earth is moulded on the walls with the hands or simple tools and without shuttering, and pisé, where the earth is only just moist enough to be rammed in stout formwork by hand, or mechanically. All these methods have the disadvantage that cracking due to the shrinkage of the earth as it dries out may be serious—the risk being least with pisé.

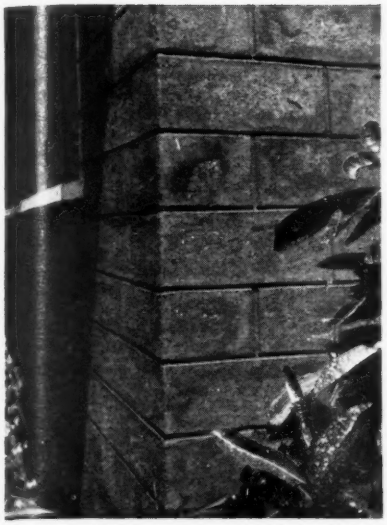

Fig. 10: Soil-cement (7 per cent by compared volume) wall built at Accra, showing condition after more than two years' exposure

To reduce this risk, the earth is often moulded or rammed in the form of bricks or blocks. These are sun-dried so that the greater part of the shrinkage has taken place before they are built into the wall.

Generally, the strength of earth walls, when they are wet, is low and their resistance to moisture penetration, erosion and abrasion poor. There are a number of traditional ways of improving this.* During recent years, the correct use of soil in the making of stabilized earth roads has been studied extensively, particularly in the United States. The broad principles of ramming earth, and of adding such things as cement and bitumen to ensure maximum stability, are known. (It is of interest to note that they follow closely the traditional rules for good pisé work.) However, whereas the traditional rules give only qualitative indications, the modern approach makes quantitative tests possible.

For earth roads, a fairly elaborate testing procedure has been developed. It is, however, unlikely that such high-quality rammed cement-earth work is needed for house construction. The house wall is not likely to be subjected to complete wetting and drying like a road, since it is usually protected by the eaves from most of the rain and the sun. It is also not subjected to continual intense abrasion. There is, therefore, a possible wastage if road qualities of rammed earth-work are used for house walls. This is something which can only be found out through organized research, relating laboratory tests to field trials, and is what Mr. A. E. S. Alcock is doing for the different earths of the Gold Coast. He has examined a large number of these in his laboratory at Accra, carrying out routine tests including a wet-dry durability test.*

Fig. 9 shows one of a series of cement-earth mixes which have been submitted to this test. The two samples to the left, containing very small amounts of cement, have failed, while those to the right, containing 6 per cent and more cement by compacted volume, have behaved themselves quite well. The test is rather a drastic one but, until we know more about the subject, may serve as a useful and safe guide. Fig. 10 shows a wall built more than two years ago in the Gold Coast using about 7 per cent. cement. It has weathered remarkably well without any protective finish.

One of the things which needs to be studied is whether it is better to make good quality, and possibly more expensive, blocks, or to rely on a protective finish. Hand-operated presses, costing £150-£200 each, are being used to an increasing extent to make these cement-earth blocks. I would like to know whether there is any real advantage in using a more elaborate machine, operating at a higher pressure, or, alternatively, whether an even simpler and cheaper press would make just as satisfactory a block.

Conclusions. I have tried to show you some of the problems arising from building in the tropics. There are, of course, many more problems which I have not had time to mention. I have discussed at some length the design of buildings for comfort because it is a subject with which the architect is very much concerned. Though our knowledge is far from complete, the broad principles are known and can be applied in practice with more understanding than is sometimes the case at present. There are conflicting requirements, but it is the business of the architect to resolve them.

Most of the research work on tropical buildings must, naturally, be carried out in the tropics. We, in this country, can assist by putting our more general experience and knowledge at the disposal of people studying these problems in the tropics, and can also act as a clearing house for information. (It is one of my main jobs as Colonial Liaison Officer at the Building Research Station.) This can, however, only supplement work in the field.

I have already mentioned the work of the South African National Building Research Institute and of the Commonwealth Experimental Building Station on hot climate design. These organizations are, of course, studying other problems, many of which are of interest to buildings in other tropical countries. (In Australia the Building Research Laboratory of the Council for Scientific and Industrial Research is responsible for building materials research.) The Indian C.S.I.R. has also recently set up a Building Research Unit at Roorkee, in the United Provinces.

In the Colonies research into tropical building is being organized. In the West Indies, Mr. W. M. Woodhouse, the Building Research Officer on the Development and Welfare Organization, is carrying on the work of initiating and developing experiments in building which was started when Mr. Gardner-Medwin was out in the West Indies. It is proposed to establish regional building research organizations in East and West Africa. In West Africa the headquarters will be at Takoradi in the Gold Coast, and funds have been made available for the appointment of a director to work out a detailed scheme for the organization. In East Africa it is proposed to set up a regional scientific and industrial research organization, which will be responsible for road, hydrological and industrial as well as building research. It will absorb the present East African Industrial Research Board, which has, among other things, interested itself in local building materials. The setting up of these organizations is taking rather a long time, but the selection of suitable staff is not an easy matter. In the meantime in many Colonies the Public Works Departments, or similar official organizations concerned with building, have set up, or are setting up, laboratories for the testing of materials both for civil engineering and building work. In a number of cases, as in Kenya and Nigeria, their services are available to the general public.

All building is, in a way, experimental, for rarely do we build twice in exactly the same manner or the same place. Each time it is the job of the architect to interpret, in bricks and mortar, requirements which are more and more the results of scientific study. In the tropics, research into building problems is only in its infancy. The architect, therefore, has to do many things which in Britain might be done for him by the research station or development group. Though he may not be a scientist, he is trained to study traditional building with a critical eye. It is this approach which will help him to keep his feet on the ground.

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DISCUSSION

Mr. Edric Neel, M.A., A.M.T.P.I. [*A*]: The lecture we have heard tonight is very significant. It seems we are at last becoming conscious that we are not just an island but that we have these vast overseas resources. There are two things going on in all these territories. One is intensive development and the other is the upthrust of standards. Both of them mean building on a larger scale than has taken place before.

The most valuable aspect, therefore, of the work that has been done by Mr. Atkinson is that it makes a beginning of what has been done on similar lines in this country—the establishment of standards of what is required. Only by study and analysis, such as we have done in this country, of weatherings and flashings and

* The Kano builders use a modified form of cob. The earth is made into cone-shaped bricks or 'tubali', which are allowed to dry hard. Sitting astride the wall, the builder binds the bricks together with a liberal bed of mud mortar, which is also used to plaster the inside and outside of the wall. Split logs from a special species of palm are used to reinforce the walls and, especially, the roof, which is also built of earth. They improve the earth in a number of ways: for example, horse-manure is mixed with it to improve its natural stability, while a variety of compounds including by-products of the local dyeing trade, and vegetable juices are used for waterproofing. This is described in *Temporary Buildings in Northern Nigeria*, by A. F. Dalby, Public Works Department, Nigeria. (Technical Paper No. 10.) 1945.

* This consists of preparing samples of cement-earth mixes, made with different proportions of cement, under standard conditions, and subjecting them to 12 cycles of soaking in water, drying in an oven, and brushing with a wire brush.

renderings in terms of tropical requirements shall we be able to abandon the old techniques which can not produce dwellings or cover space at the rate it is necessary to produce them.

Mr. Leo M. De Syllas [*A*]: The most important aspect of Mr. Atkinson's paper is that we must look at the problem not entirely as we would look at problems in Europe and America, where we have tended to think in terms of an industrialized technique. It is true to say that the increase in standards, particularly in densely developed cities, creates problems where traditional methods of construction are inadequate. But I think before we adopt that as the attitude from which we should apply ourselves to the problem, we must remember that for a very large part of the tropical areas we are dealing with agricultural and not urban communities. Urban communities are perhaps most desperately in need of the social services—housing, education and health, hospitals and clinics. Nevertheless, for the very largest part of these areas we have agricultural communities to consider.

Evidently one of the greatest factors which anybody concerned with tropical housing must examine is the very real danger that the increase in amenities in urban areas tends to act as a magnet to draw more and more people away from the land. I know the Colonial Office are acutely aware of that aspect of the problem, and it is an increasingly dangerous aspect of the rise in the standard of living. Therefore, in tackling tropical problems there still remains an enormous amount to be done in the development of the large-scale use of traditional construction at least parallel with the development of more highly industrialized techniques.

Mr. Wadi Williams, A.M.I.C.E., A.M.I.Struct.E. (Sierra Leone): Generally speaking, I am in agreement with the lecturer on the need for developing more scientific methods in house building, but one thing I think should be done is to encourage more people from the various localities to take an interest in these technical needs and to enter the architectural profession and the building trades. I think these people would be better able to appreciate the needs of the country than Europeans who go out to live there with the best intentions. In the hinterland of our countries the African will be much more adaptable to the primitive conditions that do exist and he will obtain factual information more easily than can the Europeans. Until we have the technicians who can go home and build the country the way we all want it, we can not do anything. It will just be talk and talk and no action.

Mr. M. A. Belo (Nigeria): What I would like to ask is whether this housing development will start before the industrial development of these colonies, or whether the two will go together. I do not see how we can possibly deal with these great needs until we are sufficiently advanced industrially.

Mr. A. W. Nethercott, M.I.C.E.: I would like to reassure our African friend from Nigeria. Industrialization is being watched very carefully by what we might call private enterprise. The technique now being evolved is a combination of methods which have been evolved over the past thousand years—*pisé de terre*, for example. I suggest that we must not lose sight of the economic factor which one of our friends has mentioned. The difference in wealth between the European or American system of money and the African or native, in whatever colony you may be, is comparable, as Maxwell Fry has said, to that between £6 a year and the wage of £6 5*s*. a week which is mentioned in the latest paper issued here. This is reflected in housing costs. If we take as a unit a 12 ft. by 10 ft. room, that room used to cost £30 to £50 on an average 10 or 15 years ago. It now costs twice or three times that sum. By the use of scientific and research techniques and by economizing on the use of machines or alternative materials I think we shall be doing something to bridge the gap between the wealth of the African which is very low, the wealth of his basic materials, and the wealth of our knowledge, and to produce cheaper and better housing which offers good conditions of comfort.

Mr. J. R. Jarrett-Yaskey (Sierra Leone): If we examine closely some of the schemes laid down for West Africa, we shall find there are certain things that will be out of date in the next 20 years. I believe this is a danger all architects should watch out for, because it is no use expending money on building in 'make do' schemes which, in the long run, we shall find will not be of any use at all.

Passing to the question of materials, I believe the tendency in the past has been for the average British architect, when he goes out to the colonies, to look down with disdain on the local building materials, but slowly European architects are beginning to realize that much depends on the development of native construction. The African has always tended to look to Europe to set the style, and he has simply followed it.

Mr. W. M. Woodhouse, M.A. [*A*]: There is one rather important aspect of the urban development in the West Indies which is a dangerous sign of the times. In all the islands you get the urban population equivalent to one-third of the total population, and the attractions of the town are very great. Purely urban development wants watching carefully in the light of the agricultural background. Attempts are being made to deal with housing, but it is no use building houses the people can not afford, or building too grandly in a style which is completely uneconomic. Our building standards want to be investigated very carefully, and we are grateful to Mr. Atkinson and appreciate the liaison work he is doing for the colonies to try to arrive at some basic standards.

We have not really solved the problem in terms of low-cost housing, and when you have a population which, in the West Indies, will double itself in 40 years at the rate of 2 per cent per annum and rather more in the Catholic countries, it makes you ask what the future is going to be. We are concentrating on the housing problem but we shall never solve it: we have to accept that. We have to get down to a simpler and more expeditious method, perhaps reducing our standards to some extent. I do not mean in floor space, necessarily, but in simpler forms of construction.

Mr. Bruce Martin [*A*]: I am struck by a surprising contradiction that has emerged from the discussion. On the one hand, people are saying that we need high standards, better standards, scientific standards, standards suited to the actual conditions in any given place, to satisfy problems of temperature, wind, heat and warmth, and so on. On the other hand, we are told that these standards must not be followed, that we must not build to them because it will be uneconomic to do so.

In relation to housing, in particular, I think it has been recognized generally for some time that—certainly in the Western world—the standards of housing considered both desirable and scientifically valid are much higher than can be met on the basis of renting, and consequently heavy subsidies have been necessary. In other words, the difficulty has been overcome on an economic basis by financial arrangements. It does seem to me that the problem raised by this discussion tonight is very much an economic one.

Mr. Atkinson (in reply): I am sorry there has not been more discussion on the technical aspects of building in the tropics. I expected my scientific colleagues, whose work I used in the preparation of my paper, to say I had over-simplified the problem. I also expected architects to say I had been too theoretical. I tried to strike a balance between scientific accuracy and architectural application.

The discussion has mainly been about building needs and, particularly, ways and standards of housing; problems which are as much the concern of economics as building science. This means, as one speaker pointed out, that architects must relate their technical knowledge to the background against which development is taking place. For example, in Africa there is a large rural population with limited cash incomes, of the order of £6 a year. Such peasant peoples can afford to spend very little on imported materials. For them it is a question of improving local techniques. On the other hand housing is needed for a large labour force and also, in the towns, to replace unsatisfactory housing built in the past. For this materials have to be imported and local industries set up. One of the problems of industrialization is that much building material is needed for industrial building as well as for housing. For example, in Uganda a cement works is being built to provide cement for a large hydro-electric scheme at Jinja. Until this scheme is built it will use most of the cement being made. There will be little available for housing. Yet because of it Jinja is growing fast and housing is badly needed. In such circumstances housing and industrial development are complementary.

Book Reviews

The English Tradition in Design, by *John Gloag*. (King Penguin books.) 7 in. 36 pp. + 72 pls. Harmondsworth: Penguin Books. 1947 [1948]. 2*s*. 6*d*.

Writers on art and art history differ mainly in the way they relate the past to the future. There are the whole-hoggers of whom one-half announce regretfully that an epoch of culture has run its course and that the dark ages are upon us, and the other half congratulate us on emerging from a savage state into the glorious neo-technic dawn. Between these two extremes of pessimism and optimism lie a wide variety of judgments. Those we have come to look for in Mr. Gloag's writings are characteristic of what we may call the evolutionary school. Civilization, according to this school, is continuity. Where there is continuity there is life. At various times in history our culture has suffered momentary blackouts. To many people it seemed as though the stream of life, deflected, driven underground, dispersed into bogs, had ceased to flow. But that was an illusion. It was really there all the time. It is still flowing today, not from a golden age upstream, not down to a future millenium—just flowing. And all worth-while art is part of that stream.

Mr. Gloag traces the course of English design from the 13th century down to the present time. It is still the same tradition. Ernest Gimson, the Cotswold artist-craftsman who died in 1919, once suggested that chairs and tables should be made of stamped aluminium. This ability to look both backward and forward is typical of Mr. Gloag's own attitude. To support his argument, he has collected twenty-nine modern photographs, starting with a Walter Crane wallpaper and ending with an upholstery moquette designed for London Transport's railways. These illustrations are separated from those in the earlier section by a gap of three-quarters of a century. The interval represents the Victorian collapse which was brought about by 'the active ignorance of manufacturers, and the uncritical taste of the new and very vulgar rich and the increasingly prosperous and equally vulgar middle classes.'

Mr. Gloag's conclusion, then, is that the native tradition, which was twice violently broken up and diverted—once in the 16th century and once in the 19th—has now again swung back into its proper recognizable course. He believes that 'the real English tradition in design is alight and alive today all about us. . . . Today there is greater scope than ever for the unique genius possessed by English designers for gaining sympathetic rather than dictatorial control' over materials and processes.

Mr. Gloag, a practical man of business, has had a lifetime's experience with design and designers in many fields of industry, and his confidence springs from real knowledge. It is this authoritative background that gives special value to his highly readable little book. CHRISTIAN BARMAN [*F*]

How the World Builds, by *Humphrey Pakington*. Illusd. by *R. E. Enthoven*. (How-and-why-books.) 2nd ed. 7¼ in. 123 pp. incl. pls. Adam and Charles Black. 1949. 6*s*.

Books intended to educate the general public are always difficult to write and to review. First of all the author has to make up his mind what age or educational group he wants to reach, while his publisher is naturally unwilling to define it narrowly. Then he has to make up his mind on the treatment which will appeal to the selected group and which will cause the least distortion and over-simplification of his subject. Finally, he must have a very thick skin as the book will be reviewed by both the layman and the expert, each from a different standpoint.

The new and revised edition of Mr. Pakington's book is a tribute to its success. It is aimed, one supposes, at the 9-14 age group, but it can be read with enjoyment and profit by adults and experts. His choice of metaphor and example is always apposite, and he successfully avoids condescension or familiarity. It can also be said, with all the popular books on science in one's mind, that the architect rises above the scientist and manages to avoid facetiousness.

Mr. Pakington's method is direct. He treats architecture in terms of materials and constructional methods, in chronological order. While giving a materialist interpretation of the architectural universe, he does not ignore nor underestimate what one may call the idealist approach. Indeed, if one has read Mr. Pakington aright he has adopted a factual approach because he thought it the one more likely to be understood. At the end he gathers up these units and discusses æsthetics without dogma or affectation.

Of course there are statements and ideas which one would dispute with Mr. Pakington, but this is inevitable in a book of this sort. Incidentally, Mr. Pakington confines himself largely to the European tradition and mentions but does not describe Asian or Chinese architecture. It would be ungracious not to mention Mr. Enthoven's line drawings; they exactly illustrate Mr. Pakington's arguments, and are better for their purpose than photographs would have been.

RICHARD SHEPPARD [*F*]

Pioneers of Modern Design, from William Morris to Walter Gropius, by *Nikolaus Pevsner*. [2nd ed. of Pioneers of the Modern Movement.] (Museum of Modern Art, New York.) 10 in. 152 pp. text illus. New York. 1949 (1950). $4.

The first edition of Professor Pevsner's *Pioneers of Modern Design* appeared in 1936. The new edition, issued by the Museum of Modern Art in New York, is different both in make-up and in the number and variety of illustrations. (Bureaucratic obstruction, which places books on the same level as steel bolts or boots, has so far successfully prevented this second edition from being issued by an English publisher.) The range of Professor Pevsner's book is from William Morris to Walter Gropius; and no student of the modern movement in design can afford to ignore this authoritative work, however much he may be encouraged to do so by the obscurantism of the government department that has prevented an English edition from being published.

The book consists of seven sections, as follows: i. Theories of Art from Morris to Gropius. ii. From 1851 to Morris and the Arts and Crafts. iii. 1890 in Painting. iv. Art Nouveau. v. Engineering and Architecture in the 19th century. vi. England, 1890-1914. vii. The Modern Movement before 1914. There are copious notes relating to each of these sections, tidily assembled in ten pages following Section vii. Two pages are occupied by a table of names and dates, giving the principal architects, designers and painters from 1750 to 1890: and there is a good index.

For studying the genesis and contributory influences of the modern movement, this book is essential reading; and it is very easy reading too, as the author has a limpid, unhurried style, precise without being pernickety, and colloquial without being chatty. Very rightly, he deflates a few illusions. For example, in Section vii, he points out that Le Corbusier can *not* be regarded as a pioneer of the modern movement, and he emphasizes this point as an historian, 'because Le Corbusier, partly owing to his magnificent artistic imagination and partly to a certain showmanship, has been taken for one of the creators of the Modern Movement.'

There is no confusion about the identity of pioneers in the United States. There, Professor Pevsner reminds us, 'Research carried out more conscientiously and tenaciously than anywhere else has cleared up the dates and vicissitudes of the American pioneers of the Modern Movement—which means, broadly speaking, Sullivan and Frank Lloyd Wright.'

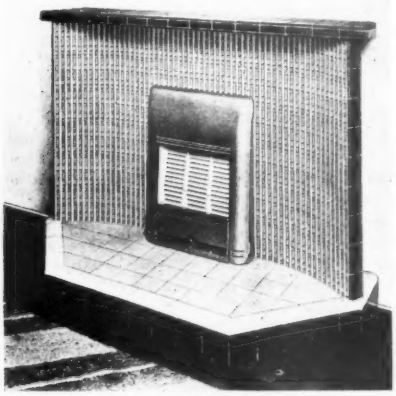
Great care has been taken by the author to select apposite illustrations which really do illumine the text. Of these, there are 137, most of them being half-tone reproductions of photographs. The book has 152 pages, and is printed on a good smooth-surfaced paper that makes the best of the excellent blocks without any repellent shininess. JOHN GLOAG [*Hon. A*]

Suffolk Building. Some critical considerations, by *Maurice Chesterton*. (East Suffolk County Council.) 8½ in. 48 pp. text illus. [Ipswich.] 1949. 4*s*.

This unassuming little book, sponsored by the East Suffolk County Council, has been written for those with small time or inclination to bother their heads over matters like architectural design or planning. It contains much sound advice of a general nature, which Suffolk people should heed. Their gracious county has avoided most of the grosser sins of chaotic development, but is not entirely guiltless, as some of the photographs show. Mr. Clough Williams-Ellis blows an appropriate and characteristic fanfare by way of introduction. J.C.P.

Review of Construction and Materials

This section gives technical and general information. The following bodies deal with specialized branches of research and will willingly answer inquiries.
The Director, The Building Research Station, Garston, near Watford, Herts. Telephone: Garston 2246.
The Director, The Forest Products Research Laboratory, Princes Risborough, Bucks. Telephone: Princes Risborough 101.
The Director, The British Standards Institution, 28 Victoria Street, Westminster, S.W.1. Telephone: Abbey 3333.
The Director, The Building Centre, 9 Conduit Street, W.1. Telephone: Mayfair 8641-46.
The Director, The Scottish Building Centre, 425-7 Sauchiehall Street, Glasgow, C.2. Telephone: Douglas 0372.



Fire surround designed by Mr. R. Y. Goodden, R.D.I. [*A*]

Merchants' Showrooms. Most architects like to select fittings by personal inspection, but not all builders' merchants lay out their showrooms to suit the eye of the architect. Messrs. Broad and Co. Ltd., of 22 Praed Street, Paddington (their address since the year 1880), have had their showrooms redesigned by Mr. John Grey [*F*], and recently invited the Technical Press to an opening ceremony performed by Mr. F. R. Yerbury [*Hon. A*], Managing Director of the Building Centre.

Two storeys of their building have been laid out to display sanitary ware and fireplaces, plus other heating appliances, respectively. The fireplace showroom consists of a series of three-sided rooms, sufficiently furnished to show off the fireplaces in suitable interiors. In this Messrs. Broad have not only followed meticulously the suggestions of their architect as to wall backgrounds, colour schemes and furnishings, but have taken his advice on the fireplaces displayed. Among the best designed of these are two by Mr. Grey himself and two by Mr. R. Y. Goodden, R.D.I. [*A*]. An unusual design for a gas fire surround, in hand-decorated strip tiles, by Mr. Goodden, is shown in the accompanying illustration.

The sanitary ware is similarly shown in a range of open-sided bathrooms with, at the ends of the showroom, well-arranged groups of hospital and kitchen equipment. Architects who visit these showrooms will see a wide selection of sanitary ware and fireplaces of a high level of design, and Messrs. Broad are to be congratulated on their good sense in making design the main criterion in their display.

Plastic Flushing Tanks. On view at Messrs. Broad's showrooms and also at the Castle Bromwich section of the B.I.F. was a new design of flushing tank, in black plastic, made by Messrs. Shires and Co. (London) Ltd., of Normans Buildings, Central Street, London, E.C.1. The low level type (illustrated here) is a specially handsome shape, its shiny black plastic body contrasting with anodized aluminium beading and flush pipe and a chromium-plated handle. Messrs. Shires are aware of the fact that low level flushing tanks, for some reason, have a high casualty rate, especially in schools and similar institutions where the easily reached 'innards' appear to have a fascination for the curious. Fireclay or cast iron covers dropped on a hard floor are liable to break, whereas real violence is needed to break the $\frac{1}{2}$ in. thick plastic cover which, in any case, is secured in place by recessed screws. The makers have also overcome the problem of brackets by incorporating a special design of concealed fixing. The design is called the 'Lynx', and the capacities are 2, $2\frac{1}{2}$ and 3 gallons. We also note that Messrs. Shires, with an eye to export, give dimensions, weights and capacities in their leaflet in metric as well as our more inconvenient system of mensuration.

Wood Preservation. The British Wood Preserving Association, which lapsed during the war, has been revived. The revival was celebrated by a luncheon on 19 April attended by the Minister of Supply, Mr. G. R. Strauss and Mr. H. Symon, Under-Secretary to the Ministry of Health. The R.I.B.A. was represented by Mr. C. H. Aslin, Vice-President.

All architects know that timber used in proper constructions where it is protected against damp has a remarkably long life; but those who have had the troublesome task of eradicating dry rot or wood boring insects know only too well that constructional conditions are not always perfect; even when defective timber has been removed and faulty construction corrected there is a danger that the timber may become reinfested from dry rot spores remaining in brickwork or reinfested by beetles whose hiding holes have been overlooked. Under such conditions it is unsafe to replace damaged timber with new timber that has not been treated with preservative.

Plastic flushing tank, Messrs. Shires and Co.

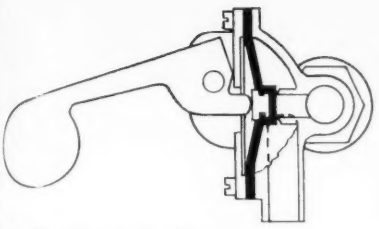
Most timber merchants now keep a stock of timber treated by one of the newer solutions which do not smell and which, if necessary, can be painted like untreated timber. Also, timber is often used in conditions, such as fencing, where it is in contact with the ground and where the preservation of it by proper pressure treatments will greatly increase its life. It was well recognized at the meeting that timber has now become a fairly expensive commodity and that its conservation is both a matter of national importance and a wise economy by the building owner.

The Association is opening a campaign to persuade users of timber that it is in their own and the national interest to have it properly treated where there is risk of decay. The Association is a non-profit-making organization and consists of public bodies, persons and manufacturers who are interested in the subject.

The British Industries Fair, 1950. In age this Fair is comparatively young—this year being its 29th birthday—but it has grown in stature and importance; at Birmingham it covered 55,000 sq. ft. more indoor space than it did last year, and added 57,000 sq. ft. to its outdoor grounds. The entire area covered by exhibits in London and Birmingham totalled 1,000,000 sq. ft.

Professor Goodden, R.D.I. [*A*], and Mr. Neville Conder [*A*] acted as advisers on the general décor of the Fair and on the design of the standard type of stand. They also advised in connection with the designs produced for exhibitors constructing their own stands. The result reflected credit on all concerned, and in the exhibits themselves it was apparent that modern views on design in industrial matters were having their effect.

If we may timidly venture on the subject of women's dresses it would seem that there is a slight tendency to use design motifs of years ago, and it will be interesting to see if that tendency extends to industrial design in the near future; at the B.I.F. practically the only signs of 'embellishment' were to be seen in the fireplace surrounds. As the fireplace is considered by some authorities to be the focal point in a living-room it may be that manufacturers feel that something that is mainly to be looked at should carry some embellishment,



The Phragm system of water control

whereas something that is chiefly for use does not require it. If that is the attitude of mind it would be well to use only those embellishments that may reasonably be held to have artistic merit.

The JOURNAL does not propose to devote a section to the B.I.F. this year, but will from time to time describe some of the exhibits that were of particular concern to architects.

Ball Cocks and Valves. Judging from the number of taps on the market claiming either that (*a*) the washers hardly ever need replacement; (*b*) they don't use washers; or (*c*) they stop water flowing while washer replacement is made, it would seem that a general level of perfection has not yet been reached. Little, however, appears to have been done about the ball cock, and anyone who has tried to re-washer the piston type may wonder at this. A new idea is now being put on the market, known as the 'Phragm', of which the principle is shown in the accompanying illustration. A rubber diaphragm has a central boss which can be forced by a lever against the orifice of the incoming water pipe. When pressure is released water flows, but the important point is that all parts on the other side of the diaphragm are out of contact with the water, and are therefore not liable to incrustation. In the case of the ball cock, adjustment of the level of the ball is made by means of a screw and not by bending the arm (having first carefully worked out which way it should be bent!). If at long last the diaphragm does need renewal, undoing three cheese-headed screws—with screwdriver slots—allows the fitting to be dismantled.

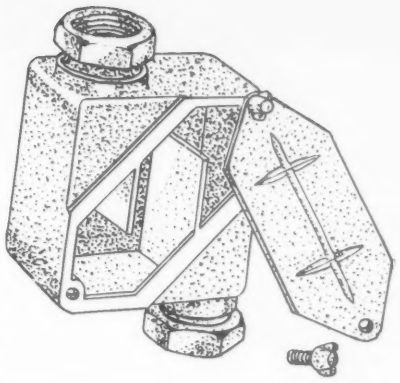
The same principle is adopted for taps, and in this case the operating arm is weighted, so that when the hand is taken away the flow of water is stopped automatically, and there should not be any dripping owing to the tap not being fully turned off. These fitments are made by Messrs. Flushing Appliances, Ltd., of Meadowbrook Road, Dorking, Surrey, who have also introduced a high-level flushing cistern in which the pull-chain passes through a tube in the cistern and comes out through the bottom close to the flushing pipe, and so does away with the usual slot in which the outside lever works, and the whole cistern is therefore dustproof.

Waste Traps. The JOURNAL has already commented on the smallness of the usual clearing eye at the bottom of a basin or sink trap; Messrs. Flushing Appliances have evidently felt the same about it, for they have brought out the type illustrated here: the cover plates are on both sides, so the 'hand' of the fitting is immaterial, and clearing the trap is made an easy matter.

Electric Sanitation. Scientific principles have been applied to water-borne main drainage and to septic tank sewage disposal systems but, beyond the chemical method of treatment, little has been done for those who can not use either of the two systems. For them an advance has now been made by the introduction of the 'Electrosan' set, which sterilizes the contents of the container. The set comprises two units; the first is a series of precision balanced plates made from pure electrolytic copper held by insulated spacing bolts, backed by a plastic screen. The unit slips into any closet container. The second unit is a small control box fitted with a carefully adjusted resistance and fully automatic vacuum switch controlling the applied power, which can be given by either a 6- or 12-volt car type accumulator, or by 6-volt dry batteries. Where electric mains are available a converter unit can be installed. All that needs to be done is to press a button, whereupon the Electrosan renders the contents of the container bacteriologically sterile, and automatically switches itself off when the action is completed. Chemicals are not needed. Two purpose-made types of closet are available in which the sets can be installed. The advantages of the system for isolated houses, caravans, yachts, aircraft and railway trains are obvious. Inquiries should be addressed to Messrs. Warren Products, Ltd., 72 Victoria Street, London, S.W.1.

Colour. As the colour of our surroundings enters into almost every moment of our waking hours it is a little strange that we have not arrived at a definite and complete system of nomenclature, although brave attempts have been made to do so. In giving a name to certain tints many of us are a little uncertain, especially where blue approaches green. Oculists tell us that associated with the retina of the eye there are certain rods and cones which it is thought have to do with the interpretation of the light vibrations reflected from coloured objects, and that if some of the rods and cones are not working efficiently our sensitivity to certain colours is impaired. But even if we are not quite sure of the name to give a tint, most of us can match it to a control tint, and this is where the British Colour Council have done most useful work. The Council recently completed the laborious task of compiling a *Dictionary of Colours for Interior Decoration* in which 378 colours are charted and indexed. The dictionary is in three volumes; the first two containing charts illustrating the colours on three surfaces—gloss, matt, and pile fabric, so that the final effect can be visualized in any finish.

The third volume contains an index of over 500 names cross-referenced with the colours illustrated in the first and second volumes, with information about the terms used in relation to colour and colour matching. The complete publication can be obtained from the British Colour Council, 13 Portman Square, London, W.1, at the price of 12 guineas.



Accessible waste trap; Messrs. Flushing Appliances, Ltd.

A Compact Shower. There are many things that have become a part of the make-up of the average Briton, deep-rooted by custom and usage; one is the open fire, and another is his bath; in his conservative mind horizontality is essential to cleanliness. It is true that in some houses there are showers, but these are usually in addition to the bath and they slightly complicate the plumbing. Messrs. Clifford Products Ltd., of Imperial Works, Wednesbury, Staffs, have produced a self-contained shower and airing cupboard which is 6 ft. 11 in. high, 3 ft. 7 in. wide, and 2 ft. 3 in. back to front. The base forms a tray deep enough to be used for bathing babies; the spray is fixed at an angle on the side of the cabinet, so that the hair need not be wetted; the gas heater has been specially designed by Messrs. Ascot, and is placed at the top of a side cupboard of which the lower part acts as an airing cupboard. Inside the shower compartment are a handrail, soap dish, towel hook, waterproof curtain, rubber mat, and the water control valves. The unit is made of cream stove-enamelled aluminium, and a point is that the base of the shower is supported over its whole area by a steel structure. The unit is called the Hotsprings shower and airing cabinet, and it has obvious uses for flat conversions, dressing rooms, sports pavilions and industrial buildings.

Gypsum Plaster. Plaster is one of the oldest materials used for covering walls, and most of its little ways are known; still, there is always something to be learnt about everything—however well known. It is especially useful to have in a compact and convenient form some hints on failures in plaster, and the reason for them. The Gotham Company, Ltd., of Bentwick Buildings, Wheeler Gate, Nottingham, have issued their *Green* book on gypsum plaster work, and, although mainly concerned with their 'Thistle' gypsum plaster, there is information which should be useful to all architects, even if it serves only as a reminder of what they already know.

The Cost of House-building

Second Report of the Committee of Inquiry appointed by the Minister of Health

IN JUNE 1947 the Minister of Health appointed a committee (known as the Girdwood Committee) with these terms of reference: 'To consider and keep under review the costs of house-building and to make recommendations'.

The first report of the committee was published in September 1948, and was summarized in the October 1948 JOURNAL. The second report has now been published, and it deals (*a*) with the changes that have occurred in the costs of building local authority houses between October 1947 and October 1949, and (*b*) the possibilities of lowering the present level of costs. The report states that special significance attaches to the period covered by the review because the increase in building trade wages that took place in November 1947 was coupled with an agreement for introducing a new system of incentive payments for an experimental period of two years.

The report does not deal with the cost of houses erected by builders for sale or letting, commonly called 'private enterprise building', but an investigation into the costs of some of these houses, and their relation to the costs of local authority houses, is being undertaken.

In the first report the average final cost of traditional three-bedroom houses of 1,029 sq. ft., built under contract for local authorities and completed in October 1947, was estimated at £1,242, and a review of later evidence has not caused the committee to alter that figure.

In the second report the same basis of traditional three-bedroom houses has been taken, but of a superficial area of 1,050 sq. ft., including an outbuilding of some 110 sq. ft. The final cost is found to be £1,321, the final cost per sq. ft. 25*s*. 2*d*. (as against 24*s*. 2*d*. given in the first report), and the percentage increase of final cost over tender price is 2.7 per cent, as against the previous 6.1 per cent. Thus the final cost of the average house completed in October 1949 is £79 more than the corresponding cost in October 1947, but the increase of final cost over tender price is less than half the 1947 figure, being £35 as compared with £72. The total costs are given as: building cost, £1,321; land and site development, £158; quantity surveyor's and architect's fees (or cost of corresponding local authority staff), £36; total cost, £1,515.

In the view of the committee the increase in cost of the average 1949 house, as compared with its 1947 counterpart, is due mainly to increases in the cost of materials, in wages rates and in the average size of the houses, partially offset by an improvement in productivity and by economies due to simplified design and specification.

Man-hours. For the type of house under survey the report gives 2,575 as the average number of man-hours, excluding guaranteed and travelling time. This is a reduction of about 13 per cent compared with the 1947 house, but is still 26 per cent above the 1938-39 level. Thus productivity is still 20 per cent below pre-war level. It is estimated that improved output has led to a reduction of 404 man-hours per house as compared with 1947, which is equivalent to £55 in wages, but as this improvement is partly due to incentive schemes, bonuses have to be set against the saving in wages.

Improvement in Productivity. The report gives the following as the major factors contributing to the improvement in productivity; (*a*) materials are more freely available and the progress of housing contracts is no longer delayed on that score; (*b*) in general, the available labour force is adequate for the work in hand; (*c*) the overloading of the building industry has been corrected; (*d*) increased experience has been gained by all concerned; (*e*) weather conditions in 1948 and 1949 were better than in January to March 1947; (*f*) incentive schemes have been introduced on some contracts.

On the effect of incentive schemes the report finds that, over the country as a whole, schemes have been operated on about one contract in three, but as these are mainly the larger contracts they cover about half the number of houses completed in October 1949. The schemes adopted are varied; well-designed schemes have been taken up with enthusiasm and goodwill on both sides, and there has been a considerable improvement in productivity, but on others the effect has been small. The general indications are that the average reduction in man-hours, due to the schemes, has been some 300 or 400 per house, but as these figures apply to only half the number of houses built, the average over all houses would be some 150 to 200 man-hours reduction per house. As the total reduction in man-hours for all reasons is about 400 for the 1949 house it will be seen that the proportion due to incentive schemes is less than half. On most schemes the greater part of the saving in direct wages is paid out in bonus. In addition, there are savings in labour on-costs, plant charges and general overhead expenses consequent on the quicker completion of contracts, but generally these are largely offset by the cost of administration. On average, the saving due to incentive schemes may be taken as about £15 per house.

Size of Contracts. The report notes that in most rural districts the need is for small numbers of houses on several scattered sites, and contracts are therefore usually small; 25 houses or less. In urban districts contracts are for more than 25 houses, and in large towns for more than 50. Evidence shows that man-hours per house actually worked on the site are fewer on larger contracts; a contract for 20 houses may require some 250 to 350 fewer site man-hours per house than a contract for 4 houses. Additional but smaller reductions occur in bigger contracts. This saving of 350-450 man-hours per house on a contract for 40 houses, compared with one for 4 houses, represents a saving of from £53 to £68 a house in labour costs, and the contractor should be able to buy many materials at more favourable rates for large than for small contracts. As the evidence suggests that a saving in cost per house can be secured by building houses in larger contracts, the report suggests that, where circumstances permit, local authorities should plan their housing programmes accordingly.

General. The report states that 86 per cent of all post-war permanent local authority houses completed by March 1948, were of the three-bedroom type, and it recommends that the provision of a larger proportion of the two-bedroom type should be further studied, in view of the saving thereby obtained.

Eighty per cent of local authorities use the R.I.B.A. form of contract, and in most of the other cases the form used is substantially the same; the report therefore recommends that local authorities not at present using the current R.I.B.A. form should consider the advantages of doing so. It is considered that the ultimate objective should be the discontinuance of the price fluctuations clause and a reversion to the system of fixed price tendering.

The report notes that even in adjoining areas, where conditions are similar, the requirements of local authorities under their bye-laws account for differences in the cost of building and site development, and it is considered by the committee that the Ministry of Health, in reviewing their model bye-laws for 'Buildings' and 'New Streets', should keep cost implications prominently in mind. The report also recommends that local authorities should consider reducing the minimum height of rooms from 8 ft. to 7 ft. 6 in., as it is estimated that this would result in a saving of £15 to £20 a house.

Summary of Report and Conclusions. Among the points made in the summary, that are not already set out above, are the following: The estimated increase of £79 in the cost of the average 1949 house, as compared with the 1947 house, is made up by (*a*) an increase of £104 due to rise in the general level of house-building costs; (*b*) an increase of £16 due to the increased size of the average 1949 house; (*c*) a saving of £41 effected by simplified design and specification.

The general level of costs, above the 1938-39 level, was 140 per cent in 1947 and 160 per cent in 1949.

Materials for the 1949 house cost £86 more than for the 1947 house, despite some decrease in quantity.

Incentive schemes could be more generally applied, and so assist in further reductions in man-hours with consequent reduction in cost.

In areas where competition is poor it may be possible to arrange contracts of a size to attract tenderers from outside, as well as inside, the area.

Technical officers and private architects concerned with local authority housebuilding are recommended to study the list of possible economies prepared by the Ministry of Health.

More terraced, and fewer semi-detached, houses should be built as an appreciable economy can result.

The recommendation made in the first report is repeated, namely, that standards of accommodation and equipment should be reviewed afresh.

The report is published by H.M. Stationery Office, price 1*s.* 3*d.* net. S.O. Code No. 32-404.

Practice Notes

Edited by Charles Woodward [*A*]

MINISTRY OF TOWN AND COUNTRY PLANNING. The Town and Country Planning General Development Order and Development Charge Applications Regulations, 1950. S.I. No. 728. This Order came into operation on 22 May 1950, and repealed the former Orders of 1948 and 1949. It also repealed the Making of Applications Regulations, 1948, and included them in the new Order.

Article 2 of the Order contains five additional definitions, i.e. aerodrome, agricultural land, dwelling-house, original, and painting.

'Dwelling-house' does not include a building containing one or more flats as defined by the Housing Act, 1936. This must be read in connection with permitted development under Class I of the First Schedule of the Order.

'Original' defines the date of the existence of a building for the purpose of Class I of the First Schedule. The word is included in Class I.

'Painting' includes any application of colour and is permitted development under Class II of the First Schedule except for advertisement, announcement or direction.

Article 4 (2) dispenses with the approval of the Minister to a direction of a local planning authority relating only to a building included in a list compiled or approved under Section 30 of the Act, or notified to the authority by the Minister as a building of architectural or historic interest. Any other direction by a local planning authority restricting permitted development will still require the approval of the Minister.

Article 5 limits the *additional* number of copies that may be required of the form, plans and drawings submitted with an application for planning permission to three.

Applications to a local planning authority under Section 17 of the Act are included in this Article. Applications for planning permission and under Section 17 are made in respect of land in the City of London to the Common Council, outside the City to the London County Council, and outside the administrative County of London to the County Borough Council or the County District Council for the area in which the land is situate. The authority with whom the application is lodged will, where necessary, transmit it to the local planning authority to whom it is made, and the latter authority will send an acknowledgment to the applicant.

Article 5 permits an outline application to be made for consent to the erection of any buildings. Such an application is subject to the subsequent approval of the authority relating to the siting, design or external appearance of the buildings or means of access thereto. The outline application would be submitted only with a site plan. Where the authority are of the opinion that the application ought not to be considered separately from the siting, design, external appearance or means of access, the applicant may either furnish the required information or appeal to the Minister under Section 16 (3) of the Act as if the outline application had been refused by the authority.

Article 11 contains the decisions of a local planning authority against which an appeal may be made to the Minister.

Article 14 preserves any directions in force immediately before the coming into operation of this Order as if given under this Order. The Order does not apply to any permission which is deemed to be granted under Section 32 of the Act.

Development permitted without the permission of the local planning authority or the Minister is, as in the previous Order, contained in Part 1 to the First Schedule to the new Order. Part II of the Schedule contains the standard conditions applying to permitted development under Part I.

To the original 21 Classes in the First Schedule has been added Class XXII dealing with the use of aerodrome buildings as so defined.

Permitted development within the curtilage of a dwelling-house under Class I of the First Schedule must be read in conjunction with the definition of 'dwelling-house' in Article 2 of the Order. This definition excludes a building with one or more flats as defined in the Housing Act, 1936. 'Flat' is defined in the 1936 Act as a separate and self-contained set of premises constructed for use for the purposes of a dwelling and forming part of a building from some other part of which it is divided horizontally.

Development under Class I (1), subject to the conditions, is permitted up to 4,000 cubic feet and will not be subject to development charge. Development over 4,000 cubic feet will require an application for planning consent.

The erection of a garage, stable, loosebox, or coach-house within the curtilage of the dwelling-house is treated as the enlargement of the dwelling-house for the purposes of Class I (1).

Development within Class I (2), subject to the conditions, is exempt from development charge under the Development Charge Exemptions Regulations, 1948. A dwelling, garage, stable, loosebox or coach-house is excluded from this class.

Class II permits the erection or construction of gates, fences, walls or other means of enclosure, subject to the conditions. Painting the exterior of any building or work, except for the purpose of advertisement, announcement or direction, is permitted under this class, and 'painting' includes any application of colour as defined in Article 2.

Changes of use under Class III includes use for any purpose within Class I of the Schedule to the Use Classes Order, 1948, from use as a restaurant.

Permitted development on agricultural land having an area of more than ·1 acre is defined in Class VI.

Permitted development for industrial purposes is contained in Class VIII, and, subject to the conditions, limited additions may be made to industrial buildings.

The rebuilding, restoration or replacement of war damaged buildings permitted under Class XI now allows the cubic content of the original building to be increased by such amount as is permitted under Class I or Class VIII. A material alteration from the external appearance of the building immediately before the damage requires the approval of the local planning authority.

Part II of the Second Schedule to the Order contains the Development Charge Applications Regulations, 1950.

The new Order relates only to planning permission. It will still be necessary to obtain a building licence and any consents required under Building Acts or Bye-laws. The Town and Country Planning (Landscape Areas Special Development) Order, 1950, S.I.729, must be read in conjunction with the above General Development Order. The Landscape Areas Order is made under Section 13 of the 1947 Act, in relation to certain areas of natural beauty which are specified in the Schedule to the Order. The Order provides that development for the purposes of Class VI (Agricultural Building Works and uses) or Class VII (Forestry Buildings and Works) in the First Schedule to the General Development Order shall in those special areas be subject to a condition enabling the local planning authority to control the design and external appearance of buildings. These special areas are in parts of the counties of Caernarvon, Chester, Cumberland, Derby, Lancaster, Merioneth, and Westmorland, and 14 days' notice is

required to be given to the local planning authority of an intention to develop under the General Development Order with a short description of the proposed building or extension and the materials to be used together with a site plan. If within the 14 days the applicant is so notified by the local planning authority, approval must be obtained to the design and external appearance before any development is commenced.

IN PARLIAMENT. Government Departments (Architects). Asked how many architects and their assistants are now employed by public Departments of all kinds, compared with 1938, the Financial Secretary to the Treasury replied: The approximate totals for Government Departments are: 1950, 500 architects and 830 architectural assistants.
1938, 160 architects and 640 architectural assistants. (5 May 1950.)

Housing. Standard Contract. Asked whether the requirement placed on local authorities by paragraph 17 (2) of the memorandum accompanying his Departmental Circular 25/50, to indicate to principal regional officers of his Department the type of contract in respect of housing is anywhere reinforced, or proposed to be reinforced, by a recommendation to use the standard form of contract specially adapted for the use of local authorities and issued under the sanction of the Royal Institute of British Architects and the National Federation of Building Trades Employers, the Minister of Health replied: No, Sir, but I have the matter under consideration.

Asked further whether he was able to say, without notice, whether or not in the majority of cases this standard form of contract is at present in use by local authorities, the Minister replied: I think it is, and I am hoping very shortly to issue a circular to local authorities calling attention to the need to use it.

Asked whether he would bear in mind the recommendation of the Working Party on the Building Industry in this respect, the Minister replied: Yes, and the Report of the Girdwood Committee also deals with it. (11 May 1950.)

Development Charges. Asked what were the highest and lowest sums so far assessed for development charge on building new dwelling-houses, the Minister of Town and Country Planning replied: One thousand six hundred and fifty pounds and nil.

Asked further whether he would disclose the basis upon which these charges are made, because they seem to vary in every part of the country, the Minister replied: The basis is laid down by law. The basis is the difference between the value of the land with and without planning permission. (23 May 1950.)

APPEAL ALLOWED BY THE MINISTER. The Prudhoe Urban District Council refused permission for a bungalow to be built at Broomwood Huts West, Mickley Square, Stockfield-on-Tyne, and the applicant appealed to the Minister against this decision.

In allowing the appeal the Minister said that he considered it a serious responsibility, not to be lightly undertaken by planning authorities anywhere, to forbid an individual to build a small house on a small piece of land owned by him, where the development is unobjectionable on grounds of amenity, and where the provision of public services would involve no exceptional costs.

The Council had put forward the view that the development would be 'sporadic and ribbon', but in the Minister's view it would constitute what is sometimes called 'infilling'. (Notice by the Ministry, dated 4 May 1950. No. 3.)

CENTRAL LAND BOARD. ASSIGNMENT OF CLAIMS. The Central Land Board are required to accept notice of assignment of the right to receive a payment (or part of a payment) on a claim made under Part VI of the 1947 Act, Section 64 (2), and Regulation 7 of the Claims for depreciation of Land Values Regulations, S.I. 1948, No. 902. The Board can not, however, where the assignment relates to part of a payment, settle questions of apportionment between parties to an assignment. The Board's duty is limited to a valuation of the interest owned by the claimant on the Appointed Day in the whole of the land in respect of which he has made a claim.

Whatever form the assignment takes, the parties will have to agree between themselves and advise the Board how the payment to be made in respect of the claim is to be divided between them. (Press Notice, 15 May 1950.)

The Town and Country Planning (Churches, Places of Religious Worship and Burial Grounds) Regulations, 1950. S.I. No. 792. Price 3d. net.

The Minister has now made these Regulations which came into operation on 24 May and revoke the previous Regulations. S.I. 1948, No. 401. They prescribe the conditions governing the use of land, consecrated or otherwise acquired under the Town and Country Planning Acts, or appropriated, and occupied or formerly occupied as churches, places of religious worship or burial grounds. The Ministry have issued Circular No. 86, dated 24 May, in connection with the Regulations.

Development Alongside Trunk and Classified Roads. The Ministry have issued Circular No. 88, dated 29 May 1950, giving guidance to local planning authorities on the considerations which should govern the grant of planning permission for the development of land adjacent to trunk and classified roads. The Circular is obtainable at H.M. Stationery Office, price 1*d*.

MINISTRY OF WORKS. The Ministry of Works have informed the Royal Institute of British Architects that the condition requiring work to be started within two months from the issue of a building licence will be deleted from future licences. If in exceptional cases owing, for example, to labour shortage it is necessary to make a condition that work should be started by a certain time, the condition will be inserted on the merits of the case.

As noted in Circular 57/50 issued to Housing Authorities by the Ministry of Health, local authorities have been told by that Ministry to delete the two months condition from licences which they issue, and ensure that persons to whom licences are issued are in fact ready to start work within such reasonable period as they think fit.

MINISTRY OF HEALTH. *Circular* 57/50 dated 17 May, refers to licences fo building new houses and is addressed t Housing Authorities in England.

Where a local authority is satisfied tha the most urgent needs of their district can not be met satisfactorily unless licences are issued in excess of the present authorized proportion of one-tenth, the Minister is prepared to leave it to thei discretion to increase up to a maximum o one-fifth the proportion of the allocation for 1951, which in due course will be made to them by the Principal Regional Officer. If a local authority have evidence which in their opinion indicates that even more than one-fifth of the allocation should be devoted to building under licence, the Minister will be prepared to consider exceptionally their proposals, which should be submitted to the Principal Regional Officer with a full explanation of the facts and considerations on which they are based. These arrangements will apply in relation to the allocations to be made to local authorities for 1951.

As the Minister of Works has decided to delete from licences issued by him the condition that construction must be started within two months of the date of the licence, local authorities should delete this condition from licences which they issue. They should ensure that persons to whom licences are issued are in fact ready to start work within such reasonable period as they think fit. They should not, however, make the issue of a licence, or the promise of one, conditional upon the applicant having already acquired a site.

If an applicant living in one district desires to move to another district and to build a house there for his own occupation, arrangements may be made by the respective local authorities so that the licence is issued by the local authority in whose area the house is to be built and is chargeable against the quota of the local authority for the district in which the applicant at present lives.

Whether housing accommodation provided by the use of reconstituted parts of timber or other structures is to be treated as the erection of a new house or as the improvement of a house or conversion of a building must be decided by the local authority on the facts of the particular case. Generally if such housing accommodation is provided on a new site, it must be treated as a new building. Circular 108/48 remains in force subject to such modifications as are required by this Circular 57/50.

Circular 58/50, dated 22 May, addressed to Housing Authorities in England, deals with House Building Costs, having regard to the Second Report of the Girdwood Committee. The Circular emphasizes that whilst the accommodation, amenity and equipment recommended in the Housing Manual, 1949, must not be relaxed those standards should be achieved at the lowest possible cost. Careful watch should be kept on the overall cost of new houses, and not merely on the cost per square foot of floor area. The aim should be to secure the best value for money, and the priced bills of quantities should be carefully scrutinized with a view of checking costs. If, when all practicable measures have been taken to secure low prices, the tenders are, in the opinion of the local authority, in excess of a fair and reasonable price for the work, the authority should consider whether the scheme should not be deferred for a time.

The large majority of local authority housing contracts are in the form prepared by the Royal Institute of British Architects and specially adapted for the use of local authorities. Local authorities not at present using that form should consider the advantages to be gained by the use of a form now so widely known and understood.

THE ROYAL INSTITUTION OF CHARTERED SURVEYORS. The Royal Institution has published a comprehensive Memorandum on the Town and Country Planning Act, 1947, examining the operation of the Act in practice and suggesting amendments which the Institution thinks necessary to remove the causes of its major defects and facilitate the attainment of its principal objects. Copies of the Memorandum are available to non-members of the Institution on application (with remittance) to the Secretary at 12 Great George Street, Westminster, S.W.1. Price 5*s.* 0*d.*

Among the Institution's recommendations is one suggesting that the General Development Order should be kept under review and further exemptions from express permission should be made. The new general Development Order which has just come into operation contains such further exemptions.

Another recommendation is that in the case of a 'deemed refusal' of planning permission the applicant should be entitled to require the local planning authority to state its reasons. As matters stand at present a ghastly silence on the part of the local planning authority compels the applicant to lodge an appeal to the Minister. Presumably the legal mind is satisfied that the notification set out in Part I of the Second Schedule to the General Development Order is within the powers given by the Act.

The Institution's Memorandum is the result of an intensive study of the Act, with consequent constructive recommendations.

REFERENCING OF BILLS OF QUANTITIES. The R.I.C.S. December Journal contains the following note: 'It has been suggested to the Quantity Surveyor's Committee of the Royal Institution that it would be convenient to architects and contractors if the practice of referencing bills of quantities were more widely followed than it is at present. The Quantity Surveyor's Committee agree that the practice of giving a reference to each item in a bill of quantities is a good one, and recommend its adoption where possible by chartered quantity surveyors. The Committee prefer the method of numbering each page and lettering each item on that page to a consecutive numbering of every item throughout the bill of quantities, though they agree that the latter method may be preferable in exceptional circumstances.'

NATIONAL SCHEDULES OF DAYWORK CHARGES FOR GENERAL BUILDING WORK. The revised Schedules came into operation on 1 June 1950, and are authorized by agreement between the R.I.C.S. and the N.F.B.T.E. They are obtainable from the offices of either body, price 6*d.*

There are two Schedules, one dealing with daywork executed under a fixed price contract, and the other with daywork on jobbing work carried out on a labour and materials cost basis.

These Schedules supersede the Schedule authorized in 1933.

LAW CASES. Where a builder has sued a building owner for the cost of building work carried out in breach of the Defence Regulation 56A, it has been held that the builder can not recover as the contract is illegal. In a case recently heard at Northwich County Court the County Court Judge held that where money has been paid to a builder under an illegal contract the building owner can not sue for its return. The circumstances of this case were that during the erection of a house to be built for £1,200, the builders thought that the permissible limit for the building of a house under licence had been raised to £1,300, in the Provinces, and this was confirmed by the Rural District Council, but afterwards was found to be wrong. The building owner had paid the builders the additional £100, and now claimed its return. The Judge held that a person was not entitled to recover money paid under an illegal contract and the loss lay where it fell.

Kiril Mischeff v. Constant Smith and Co. In this case where the arbitrators' award contained an error of law on its face but was not otherwise ambiguous, the Judge held that the award should be sent back to them to cure their defective reasoning, there being no rigid rule of law that wherever an award contained an error of law on its face it should be set aside and not remitted for reconsideration. (Weekly Notes (1950) 184.)

MINISTRY OF WORKS. Building Licensing. The Control of Building Operations (No. 15) Order, S.I. 1950, No. 968, renews the financial limits within which building and civil engineering work may be carried out without a licence. The limits remain unchanged and the Order covers the period 1 July 1950 to 30 June 1951.

Correspondence

ARCHITECTURAL EDUCATION

Sir,—I should like to add my comment to the discussion regarding architectural education which appeared in your report of the Annual Meeting.

Mr. Hollamby, who raised the question of the small percentage of passes in the Institute Exams, suggested that this 'can only indicate that the standard of training available for those who have to take the external examinations is much lower than those who have the advantage of the recognized schools'.

There may be some truth in this suggestion, but I would like to put forward another probable reason for the disparity in percentage passes. I suggest that the standard of examination in the recognized schools is neither as high nor as impartial as the standard of the Institute Exams. Such an idea will probably shock many, but I consider that in the schools where the teacher is also the examiner there is a natural and inevitable desire on the part of the staff for all their students to be successful—the prestige of the school demands a large percentage of passes; whereas in the Institute Exams the candidates are mere names to the hard-headed practising architect examiners to whom the only consideration is the quality of work submitted.

Dare one suggest that not only the school exams but the whole of their teaching methods need considerable overhaul with a view to placing quality above quantity in the production of new architects?—Yours faithfully,

GEOFFREY L. PRICE [*A*]

THE LATE HARRY REDFERN

Sir,—I note from the JOURNAL, with grief, of the death of the late Harry Redfern[*F*], on 6 March, 1950. As a layman, possibly it would not be inappropriate to record my appreciation of his great service to architecture. I was privileged to be associated with him for over twenty-five years in connection with the State Management Schemes in England and Scotland.

As General Manager of the Carlisle Scheme from 1928 to 1940 I can testify to his wonderful capacity to transform the ordinary layman's ideas and views into practical propositions. He was always willing to give very careful consideration to any proposition, however unpractical it might appear to the professional mind. It was an education to watch Harry Redfern with his pencil producing, without effort, in practical form, the immature conceptions of the layman. He was always courteous and approachable, and willing to listen to any proposal submitted to him and his death is no doubt as great a loss to the profession as it is to those who had the privilege of being associated with him.—Yours faithfully,

ALBERT E. MITCHELL
(Late General Manager of the Carlisle S.M. Scheme.)

THOUGHTS ON THE SOANE AWARD

Sir,—Members of the Jury for the Soane Medallion, 1950, have asked me to refer to the correspondence which has appeared in the R.I.B.A. JOURNAL on the subject of the award to Mr. Laird for his design for a Parish Church.

In drafting the conditions of competition care was taken to make the site realistic, both in plan and section. The award was made to the design which, in the opinion of the Jury, offered the most imaginative interpretation of both the site conditions and the building programme, and the Jury was unanimous in its award.—Yours faithfully, E. MAXWELL FRY [*F*]

A VISIT TO FINLAND

Sir,—It has been pointed out to me by Mr. Kakan Nordhagen of Stockholm that there are several small inaccuracies in the article on my visit to Finland published in the April JOURNAL.

In the picture of the market square the building on the left is the Swedish Legation (Architect T. Grut) and not the City Hall as stated: the President's Palace can not be seen in the photograph, but only the two wings which project in front of the building; and the name of the Uspenski Cathedral (Architect Gornastajev) was wrongly spelt. —Yours faithfully, D. H. S. PRINCE [*A*]

Notes and Notices

NOTICES

R.I.B.A. Distinction in Town Planning

The Council of the R.I.B.A. have conferred the R.I.B.A. Distinction in Town Planning upon Mr. Thomas E. North [*F*], Borough Architect and Planning Officer of the County Borough of West Ham, for his outstanding services to town planning in the reconstruction of this heavily war-damaged borough.

Cessation of Membership

Under the provisions of Bye-law 21 the following has ceased to be a member of the Royal Institute: As Licentiate: Edward T. Evans.

The Reception of New Members at General Meetings

The procedure for the introduction and reception of new members at General Meetings has been revised and is now as follows. New members will be asked to notify the Secretary R.I.B.A. beforehand of the date of the General Meeting at which they desire to be introduced and a printed postcard will be sent to each newly-elected member for this purpose. On arrival at the R.I.B.A. new members must notify the office of their presence and will then take their places in the seats specially numbered and reserved for their use. On being asked to present themselves for formal admission, the new members will file out in turn into the left-hand aisle and after shaking hands with the Chairman will return to their seats by way of the centre aisle.

It will not now be necessary for new members to be accompanied by supporters.

Formal admission will take place at all the Ordinary General Meetings with the exception of those on the following dates:

14 November 1950. Inaugural General Meeting.
6 February 1951. Presentation of Medals and Prizes.
3 April 1951. Presentation of Royal Gold Medal.

Associates and the Fellowship

Associates who are eligible and desirous of transferring to the Fellowship are reminded that if they wish to take advantage of the next available election they should send the necessary nomination forms to the Secretary, R.I.B.A., as soon as possible.

R.I.B.A. Examination for the Office of Building Surveyor under Local Authorities

At the R.I.B.A. Examination for the Office of Building Surveyor under Local Authorities held on 26, 27 and 28 April 1950, ten candidates presented themselves, and the following were successful: Mr. Alan C. Corke, Mr. Fred Randle, Mr. Reginald A. Todd.

COMPETITIONS

Competition for Medical Buildings Extension, Edinburgh University

The University of Edinburgh invite architects to submit designs in competition for an extension to the Medical Buildings to be erected on a site on the north side of George Square, Edinburgh.

Assessor: Mr. A. G. R. Mackenzie, A.R.S.A. [*F*].
Premiums: 1,000 gns., 600 gns., 300 gns.
Last day for submitting designs: 30 September 1950.

Conditions may be obtained on application to the Secretary of the University, Edinburgh. Deposit £2 2*s*.

Architectural Competition: Nairobi City Hall

The Municipal Council of Nairobi, Kenya, invites architects resident in the United Kingdom and all British Dominions, Colonies and Dependencies to submit designs in competition for new City Halls and Offices which it proposes to erect in Nairobi.

Assessor: Prof. L. W. Thornton White [*F*], Cape Town.
Premiums: £550, £450, £250.
Last day for *posting* designs: 19 October 1950.

Conditions may be obtained on application, *preferably by air mail*, to the Town Clerk, P.O. Box 651, Town Hall, Nairobi, Kenya. Deposit £2 2*s*.

COMPETITION RESULTS

Competition for Proposed Civic Hall, Guildford

1. L. F. Richards, A.M.T.P.I. [*A*] and Charles W. H. Wright [*Student*].
2. W. S. Bryant [*A*] and G. A. H. Pearce [*A*].
3. Eric G. Broughton, A.M.T.P.I.

Competition for 1939-45 Victorian War Memorial

1. Ernest E. Milston.
2. Alex. S. Hall [*F*].
3. N. B. Williamson.

Competition for a Health Centre, Manchester Building Trades Exhibition

The names of the winners of the third prize were printed wrongly on page 288 of the May JOURNAL. The names should have been Denis and Christine M. Bowman [*A*].

BOARD OF ARCHITECTURAL EDUCATION

R.I.B.A. Maintenance Scholarships in Architecture

The R.I.B.A. offer for award in July 1950 the following Maintenance Scholarships in Architecture, tenable from 1 October 1950:

(*a*) An R.I.B.A. 4th and 5th year Maintenance Scholarship of £60 to enable students who have passed the Intermediate stage to complete an approved course at a School of Architecture recognized for exemption from the R.I.B.A. Final Examination.

(*b*) The Ralph Knott Memorial Maintenance Scholarship of a maximum value of £45 per annum (tenable only at the School of Architecture, The Architectural Association, London).

(*c*) The Howe Green 4th and 5th year Maintenance Scholarship of £40 to enable students who have passed the Intermediate stage to complete an approved course at a School of Architecture recognized for exemption from the R.I.B.A. Final Examination.

(*d*) The Hartley Hogarth Scholarship to provide grants towards the fees for architectural study at any School of Architecture recognized for exemption from the R.I.B.A. Intermediate Examination or from the R.I.B.A. Intermediate and Final Examination, is available to any student or students who produce satisfactory evidence of having been resident in the Borough of Keighley for a period of ten years prior to 1 October of the year in which the application is made. Its value will be that of the fees of the School of Architecture selected.

The Scholarships are intended to enable promising students, whose parents or guardians have not the necessary means, to attend approved courses at the Schools of Architecture recognized for exemption from the R.I.B.A. examinations. Students already taking such a course are also eligible to apply for a Scholarship. The Scholarships are available only for students who are British subjects by birth or naturalization.

The value of the Scholarships, up to the limits stated, will depend on the financial circumstances of the parents or guardians of the candidate. The parents or guardians will be required to furnish particulars on the proper form of their financial position.

Applications for the Scholarships (in accordance with the regulations for applications) must be made to the Secretary to the Board of Architectural Education, R.I.B.A., 66 Portland Place, London, W.1. The closing date for the receipt of applications, duly completed, is 1 July 1950. The award will be made towards the end of July.

Tite Prize Competition

In the United Kingdom 483 competitors took part in the Tite Prize en loge Competition. The following competitors have been selected to proceed with the final drawings for the competition: Mr. Brian Austin (Leicester College of Art), Mr. Arthur G. Batt (L.C.C. School of Building, Brixton), Mr. Philip Del Nevo (Oxford School of Architecture), Mr. Sidney D. Dray (Canterbury College of Art), Mr. George A. Macnab (Aberdeen School of Architecture: Robert Gordon's Technical College), Mr. Ronald L. Marshall (Department of Architecture, Municipal College, Southend-on-Sea), Mr. Leon B. Morton (Department of Architecture, University of Sheffield), Mr. John S. Walker (Hull College of Art), Mr. Peter G. Wilson (Hull College of Art).

The Victory Scholarship Competition

In the United Kingdom 100 competitors took part in the Victory Scholarship en loge Competition. The following competitors have been selected to proceed with the final drawings for the competition: Mr. Adrian B. Fuller (Nottingham College of Art), Mr. Gerald V. Howes (Edinburgh College of Art), Mr. Frederick M. D. McIntosh (Dundee College of Art), Mr. Thomas F. A. Manning (Bartlett School

of Architecture, London University), Mr. Alan E. Moody (Department of Architecture, The Northern Polytechnic, London), Mr. Herbert S. Morel (Architectural Association, School of Architecture), Mr. James D. Shearer (Edinburgh College of Art), Mr. Brian D. Smith (Department of Architecture, The Northern Polytechnic, London), Mr. Wilfrid R. Ussner (Architectural Association, School of Architecture), Mr. Peter L. A. Williams (Glasgow School of Architecture).

R.I.B.A. Final Examination

Mr. Raymond Jay [*Student*], Littleborough, Lancs, has been awarded a *Distinction in Thesis*.

ALLIED SOCIETIES

Changes in Officers and Addresses

South Eastern Society of Architects—Tunbridge Wells District Chapter. Hon. Secretary, Mr. F. R. Pite [*A*], 'Hursley', 54 The Drive, Sevenoaks, Kent.

Royal Incorporation of Architects in Scotland—Aberdeen Society of Architects. Secretary and Treasurer, Mr. G. D. G. MacKinnon, 23 Market Street, Aberdeen.

Northern Architectural Association—Tees-Side Branch. Chairman, Mr. Thomas Victor Deas [*A*], High Row Chambers, Darlington.

South Wales Institute of Architects—Eastern (Newport) Branch. Chairman, Mr. Louis F. Hurley, Brynheulog, Crickhowell, Brec.

Essex, Cambridge and Hertfordshire Society of Architects. President, Mr. David A. Wilkie [*F*], 13 Langley Way, Watford, Herts. *Colchester and District Chapter*. Chairman, Mr. Roy Gould [*A*], 31 Connaught Gardens West, Clacton-on-Sea; Hurlingham Chambers, Clacton-on-Sea. Hon. Secretary, Mr. Alan Mather, 47 North Hill, Colchester.

West Yorkshire Society of Architects. President, Mr. C. E. Horsfall [*L*], Lord Street Chambers, Halifax.

Hampshire and Isle of Wight Architectural Association (including the Channel Islands). President, Mr. Harold S. Sawyer, M.C., A.M.T.P.I. [*F*], Queen Anne Chambers, High Street, Winchester. *Central Chapter*. Chairman, Mr. P. R. Sawyer [*A*], Queen Anne Chambers, High Street, Winchester. *Western Chapter*. Mr. Gordon Sutcliffe [*A*], 5 Hinton Road, Bournemouth. *Eastern Chapter*. Hon. Secretary, Mr. W. R. Hall [*L*], 54 St. Andrews Road, Southsea, Hants. The Hon. Secretary of the Hampshire and Isle of Wight Association is Mr. John S. Fowler [*A*], and the Secretary Miss F. Vaughan. The Association's office is now at 140 Lodge Road, Southampton (Southampton 3372), and *not* at 39 Portland Terrace, Southampton.

Royal Architectural Institute of Canada. President, Mr. J. Roxburgh Smith, 1235 McGill College Avenue, Montreal. Hon. Secretary, Mr. Harold Lawson [*F*], 660 St. Catherine Street, W., Montreal.

Royal Society of Ulster Architects. President, Mr. R. H. Gibson [*F*], 16 Donegall Square South, Belfast.

East Anglian Society of Architects. President, Mr. A. G. Berry [*F*]. New address: 10 Thorpe Road, Norwich.

South Australian Institute of Architects. Honorary Secretary, Mr. L. G. Bruer [*A*], Cowra Chambers, Grenfell Street, Adelaide.

Northern Architectural Association: Tees-side Branch

The Annual General Meeting and Dinner of the Tees-side Branch of the Northern Architectural Association was held in Stockton-on-Tees on 5 May. Among the guests who were received by Mr. J. J. Dobson [*L*], Chairman of the Branch, and who presided, were Mr. Henry Braddock [*A*], President of the Architectural Association, Mr. F. Austin Child [*F*], President of the Northern Architectural Association, and the Mayors of Stockton-on-Tees, West Hartlepool and Richmond (Yorkshire).

In his address, before proposing the toast of the Branch, Mr. Austin Child referred to the formation of the Branch in 1922, its officials in the early days and at the present time. He said that he hoped to see a development of the competition system, which he considered would very much aid the younger architects in establishing themselves.

In replying, Mr. J. J. Dobson spoke briefly of the activities of the Branch during the year, and said that he considered that the exhibition of students' drawings was the best the Branch had produced, and that there would soon be a group of young architects very well qualified to carry out work on Tees-side. Mr. E. C. Bell [*L*] proposed the toast of the Visitors. Mr. Henry Braddock, replying, said that this was the first time a President of the Architectural Association had visited the Tees-side Branch. He brought to them the good wishes of his Council. He spoke of the great importance of the right kind of architectural education, so that the young members of the profession would be properly equipped to give efficient service. He said the students at the Architectural Association School did actual work on buildings as well as lectures, studio work and office practice. He also considered there was a bright near future for the profession and that architects should be prepared to accept the great demands that would be made upon them and thus raise the status of the profession. The Mayor of Stockton, Alderman M. M. Kelly, speaking after Mr. Braddock, said he had no doubt that architects were to have great opportunities in the shaping of our new towns.

Mr. Braddock then presented the winning students of the annual competition with their prizes, and the J. P. Rudd Cup for Sketching. Mr. Braddock, addressing the students, stressed the importance of an architect being able to do freehand drawing easily so that he could quickly put his ideas on to paper.

The minutes of the last annual meeting, the financial statement and Annual Report were adopted. Mr. T. Victor Deas [*A*] was elected Chairman, Mr. M. Trotter [*L*], Vice-Chairman; Miss Mabel Thompson, Hon. Secretary; Mrs. M. Nattrass [*A*], Hon. Treasurer.

South Eastern Society of Architects' Annual Luncheon

The largest Allied Society held its annual luncheon at Maidstone on 6 May, and required a large hall to seat the 245 members and guests who attended. The toast of 'The Royal Institute of British Architects and its Allied Societies' was proposed by the President of the South Eastern Society, Mr. Arthur J. Stedman [*F*], who presided. Mr. Stedman gave a succinct account of the recent growth of the R.I.B.A. and of its greatly enhanced status in the life of the nation. In reply, the President, R.I.B.A., Mr. Michael Waterhouse, said that this status was in no small measure due to the Allied Societies which played a great part in promoting the health of the whole architectural body. The R.I.B.A., in recent years, had become more and more engaged in 'top level' negotiations, some of which were positive in results, while others were negative, that is to say preventing the happening of undesirable things. He referred to the Working Party Report and the Productivity Team Report as important events which could and should have important influences on the future health of architectural service to the nation. They both emphasized the value of individual initiative and the independence of the architect. As regards the American practice of pre-planning of building schemes he believed that if we could adopt it in combination with the best features of the British system of bills of quantities we should be a hundred years ahead of the U.S.

The toast of 'the Guests' was proposed by Mr. Alfred C. Bossom, M.P. [*F*], who said that the building industry took pride in its achievements, but that pride would not continue to act as an incentive while architects and builders were frustrated by so many difficulties and restrictions as at present. The Mayor of Maidstone, Alderman Sir Garrard Tyrwhitt-Drake, Major C. E. Pym, Chairman of the Kent County Council and the Bishop of Croydon, responded. A telegram of apology was received from Sir Hartley Shawcross, who was to have replied for the Guests, but who was unable to be present. Among the guests were Mrs. Waterhouse, Mr. C. D. Spragg, C.B.E., Secretary, R.I.B.A., Mr. W. R. Ellis, O.B.E., Assistant Secretary, R.I.B.A., and Mrs. Ellis, and Mr. E. L. Bird, M.C. [*A*], Editor of the R.I.B.A. JOURNAL.

After luncheon some 100 members and friends toured Maidstone to look at architecture old and new, beginning with the very interesting carriage museum occupying the medieval stables of the old palace. They went on to All Saints' Church, a new school and housing, and, after visiting Leeds Castle, had tea.

Royal Society of Ulster Architects' Annual General Meeting

At the Annual General Meeting of the Royal Society of Ulster Architects held on 25 May at 7 College Square North, Belfast, Mr. R. H. Gibson [*F*] was elected President for the coming year. Mr. J. M. Aitken [*A*] was elected Vice-President and Messrs. F. McArdle, M.Sc. [*F*] and A. Neill [*A*] were elected Honorary Treasurer and Honorary Secretary respectively.

In presenting the chain of office to the new President, Mr. A. F. Lucy, F.R.I.A.I., the outgoing President, congratulated the members on their unanimous choice of Mr. Gibson to act during the Society's Jubilee year. In his presidential address Mr. Gibson referred to the tremendous programme that lay before the Society. The Conference of the R.I.B.A. would take place in Belfast in May 1951 when some 500 architects from across the channel would visit Northern Ireland. Moreover, the Festival of Britain programme embracing a large exhibition during May and June 1951 would tax the resources of the members to their utmost. Mr. Gibson spoke of the appreciation of the Society for the financial support from the Northern Ireland Festival Committee which would enable members to show through their exhibition the capabilities of Northern Ireland architects. He also looked forward to the visit by the President and members of the R.I.B.A. during their Conference week and felt that the Society would receive the support of the Government and local authorities in attending the functions organized.

Mr. Gibson referred at length to the efforts which the Society were making to set up a School of Architecture at Queen's University, Belfast. He felt sure that owing to the great demand from the younger generation for architectural education the answer must be in the affirmative.

The following were elected to Council: Messrs. Val. Smyth [*A*], A. F. Lucy, F.R.I.A.I., R. H. Bell [*A*], J. R. Young [*F*], E. D. Taylor [*A*], J. V. T. Scott [*A*], W. G. Smyth [*A*], N. B. Mitchell [*A*], J. D. McCutcheon and W. H. D. McCormick [*A*].

Coventry Society of Architects' General Meeting

The Society held its meeting on 31 May and Mr. R. Hellberg [*F*] was elected Chairman for the ensuing year, and Mr. D. Kay [*A*] Vice-Chairman.

Mr. C. F. Redgrave [*A*], welcoming the new Chairman, and presenting his report, stressed the need for adequate time needed for a project if the architect, and the builder, were to give of their best to the satisfaction of the client. Proper time was complementary to good craftsmanship. 'Do not be stampeded,' said Mr. Redgrave, 'by the desire for results into commencing work too quickly.' Mr. Redgrave commented on the proportionately small amount of work authorized for rebuilding the industrial and commercial buildings of a large city like Coventry. Taking into account present high building costs he thought the offer of licences for only £100,000 for the re-development of Coventry was ungenerous and if this policy were persisted in, it would seriously retard the rebuilding of the city of Coventry. He hoped wiser authority would prevail.

Mr. J. Sidwell [*A*] was re-elected hon. Secretary, and Messrs. J. Robinson, A.R.I.C.S., and M. C. Jarrett [*A*] hon. Auditors.

Royal Incorporation of Architects in Scotland Prizes

The awards in the competitions annually promoted by the Royal Incorporation of Architects in Scotland are: *Rowand Anderson Studentship* (*Silver Medal and* £125)*:* Norman H. Cullen, Dundee School of Architecture. *Rutland Prize* (£60)*:* First Equal: Kenneth Lindsay, Edinburgh College of Art, and John L. Middleton, Aberdeen School of Architecture. Hon. Mention: Eric A. Macdonald, Dundee School of Architecture; James C. E. Tainsh, Dundee School of Architecture; A. N. Watt, Aberdeen School of Architecture. *Incorporation Prize* (£50)*:* G. A. Macnab, Aberdeen School of Architecture. Hon. Mention: T. Buxton, Dundee School of Architecture; Miss E. A. Laird, Dundee School of Architecture. *Lorimer Memorial Prize* (£10)*:* D. W. McDonald, Dundee School of Architecture. *Quarterly Essay Prize* (£10)*:* E. A. Meldrum, Aberdeen School of Architecture.

GENERAL NOTES

Decorations and Distinctions

Mr. C. F. W. Haseldine [*F*] and Mr. I. F. Warwick, M.B.E. [*A*], have been awarded the Territorial Efficiency Decoration with 1st Clasp, and the following have been awarded the Territorial Efficiency Decoration: Mr. F. W. Goddard [*A*], Mr. G. G. Haythornthwaite [*A*], Mr. S. P. Jordan [*A*], Mr. P. Turnbull [*A*], Mr. A. L. Booth [*A*], Mr. G. I. Larkin [*A*], Mr. D. C. Purcell [*A*]. (Supplement to LONDON GAZETTE, Friday 21 April.)

Warning to Members

Members in the central London district have recently received a visit from a man, who gives his name as Fox, Perkins, Lord, Roberts or Robertson and claims to be acting on behalf of the London Federation of Boys' Clubs (usually referred to by him as the London Boys' Federation) in connection with a survey of premises for the purpose of converting them into a gymnasium. This man, who is aged 20-25, 5ft. 9/10 in tall, dark and sharp featured, dressed in dark or sports clothing and hatless, is unauthorized, and has called on other professional and business people in recent weeks, varying his story as appropriate. His activities are the subject of enquiries by the police, who request that he be detained on some pretext and the police emergency service informed ('phone 999).

Architectural Association Scholarships in Architecture

The Council of the Architectural Association announce the award of the following scholarships in Architecture at the Architectural Association School of Architecture: *The 'Leverhulme' Scholarship* (value £1,000): Mr. J. P. Drinkwater, of Cheltenham (North Gloucester Technical College). *The 'Minter' Open Entrance Scholarship* (value £100): Mr. J. Y. Bell, of Carlisle (Carlisle Grammar School and School of Art). *The 'Sir Walter Lawrence' Open Entrance Scholarship* (value £100): Mr. D. J. Bottoms, of Northampton (Northampton Grammar School). *The Metal Window Scholarship* (value £75), presented by the British Metal Window Manufacturers' Association Limited: Mr. M. Denn, of London, N.W.10 (Willesden County Grammar School). *The Natural Asphalte Council Scholarship* (value £50), presented by the Natural Asphalte Mineowners and Manufacturers Council: Mr. K. B. Frampton, of Woking (Woking County Grammar School). *The Metal Window Senior Scholarship* (value £50), presented by the British Metal Window Manufacturers' Association, Limited: Mr. A. J. Short, of Southsea (Southern College of Art, Portsmouth).

Royal Academy School of Architecture

The Royal Academy School of Architecture is a day school for not more than 10 students who have taken a British University degree in Architecture or have passed the final examination of the Royal Institute of British Architects.

Qualified students may be accepted for an advanced course of training comprising an intensive study of civic architecture and the preparation of designs for buildings of national importance. The course is for one year and is gratuitous. The students will compete each year for a Royal Academy Grand Prize of £300, and a Second Prize of £150 presented by The Lord Fairhaven.

Students who wish to take this course for the year 1950-51 should apply to the Secretary, Royal Academy of Arts, Piccadilly, W.1, stating their age and qualifications, and should send with their application a portfolio of studies and designs, on Monday 24 July. Selected candidates will be invited to an interview with the Director of the School.

R.I.B.A. Golfing Society v. Institution of Civil Engineers Golfing Society

A match was played between the Institution of Civil Engineers Golfing Society and the R.I.B.A. Golfing Society on 4 May at New Zealand Golf Club, Byfleet, Surrey, resulting in a win for the Architects by 10½ matches to 7½.

R.I.B.A. Golfing Society. Meeting held at Moor Park

A meeting of the R.I.B.A. Golfing Society was held on Tuesday 16 May at Moor Park Golf Club, Herts. The results were as follows: The Allensby Bowl was won by C. Tucker with a score of 87 – 14 = 73. Runners-up: R. Scott 79 – 4 = 75; W. D. White 89 – 14 = 75.

The afternoon 4-ball Stapleford Competition was won by R. Scott and A. V. Farrier with a score of 36½ points.

Obituaries

Sir George Herbert Oatley, Hon.LL.D., R.W.A. [*F*], the well-known Bristol architect, died on 12 May in his 87th year. He entered the office of Henry Crisp in 1879 and a few years later became a partner in the firm of Crisp and Oatley. After the death of Crisp in 1896 he practised on his own account until joined in 1901 by G. C. Lawrence. The firm of Oatley and Lawrence enjoyed a very large practice and it was during this time that Sir George Oatley built many of his most important buildings including several for Bristol University. He was knighted in 1925 for his work for the University. After the death of Lawrence in 1936 Sir George again practised on his own account until in 1947 Mr. Ralph H. Brentnall, M.B.E. [*A*], joined him in partnership.

Sir George Oatley's general practice covered hospitals, offices and business premises, banks, churches, chapels and private residences in Bristol and various parts of the west of England. In his hospital work he designed the Bristol Homœopathic Hospital, St. Monica's Home of Rest, Bristol, Winford Orthopædic Hospital, Melksham Hospital, Barrow Mental Hospital, Lancashire Mental Hospital, Cardiff Mental Hospital, and Croydon Mental Hospital, and carried out extensions to Bristol General Hospital and Bristol Royal Infirmary and Children's Hospital. Three of the hospital commissions were won in competition with the late W. S. Skinner [*F*]. His commercial work included offices and business premises for Pilkington Brothers, Ltd., J. S. Fry and Sons, Jones and Co., Ltd., and E. S. and A. Robinson, Ltd., and fourteen bank buildings in the Wessex area. He also designed the extension to Taunton Museum.

In his ecclesiastical work he was architect to Bristol Cathedral and to St. Mary's Redcliffe Church. He carried out a great number of works of restoration in other churches in the west country. New churches designed by him were All Hallows Church, Easton and St. Edyth's Church, Sea Mills, both on the outskirts of Bristol. He also designed Avonmouth Congregational Church and Sea Mills Wesleyan Chapel and restored one of John Wesley's earliest chapels—Wesley's New Room in Bristol.

A Past-President of the Bristol Society of Architects, he served from 1904-06 on the R.I.B.A. Council. In 1907 he was a member of Bristol City Council and in 1930 of the Departmental Committee on Mental Deficiency Colonies.

Mr. G. D. Gordon Hake, M.A., R.W.A. [*F*], Principal of the Royal West of England School of Architecture writes :

'By the death of George Herbert Oatley, Bristol has lost not only the doyen of the profession, but also one of its most distinguished citizens.

'Although perhaps not so well known in the wider architectural world, for he hated all forms of publicity, his reputation and influence in the Bristol region and beyond were considerable. His three greatest qualities were integrity and thoroughness ; an astounding capacity for work—until his last illness he carried on the old tradition of arrival at the office long before his staff—and, thirdly, abounding generosity, so much of which was unknown to any but the recipient. All these qualities were the outcome of, and were fortified by, his devout Christian life.

'Of his earlier life and work I can not write from personal knowledge, for I first met Sir George in 1922 in the early days of the R.W.A. School of Architecture. It is a tribute to his vitality that he was then at the age when many practising architects would be considering retirement.

'He was chairman of the Bristol Kyrle Society, which later became the Bristol Civic Society, of which he was president. In this work, and as a member of the Bristol Advisory Committee, his wise counsel and civic sense were of the utmost value.

'Always generous in his encouragement of the younger generation, he took a keen and practical interest in the growth of the Royal West of England Academy School of

Architecture. By tradition and choice he was a "Gothicist". His knowledge of medieval architecture and craftsmanship was fortunately used in his many restorations, notably at St. Mary's, Redcliffe, and Bristol Cathedral. He had the medieval love of free composition and occasional dramatic surprise. His tower of the Bristol University buildings will long dominate the city by its bold placing and fine silhouette.

'George Oatley never tolerated anything shoddy; materials and craftsmanship had always to be of the very best. With all his great achievement he was the most modest of men, a worthy survival of all the best in our tradition.'

Mr. Lance Wright [*A*] writes:

'The life work of George Herbert Oatley falls naturally into two unequal periods. During the first, which lasted from his earliest years as an architect in 1886 and continued through the first decade of the 20th century, he was mostly engaged in introducing a more recondite classic architecture into Bristol commercial building; and during the second, which opened with his appointment as architect to Bristol University in 1909 and lasted until his death, he emerged as a firm adherent to the Gothic tradition.

'Apart from the banks which he built for Messrs. Stuckey in Bristol and other parts of Somerset, few of his surviving buildings derive from his earliest years or even from his partnership with Henry Crisp (1889-96). Without doubt the most interesting among his commercial buildings still existing are those which he and his second partner—G. C. Lawrence—built for Messrs. Fry in the latter part of last century. These, conceived in red brick classic, tower over their central and therefore medieval sites, and have by now become a characteristic note in historic Bristol.

'It may well be that this close identification of Sir George Oatley with the city of his life and work provides the key to both. Certain it is that he designed the building that means most to Bristolians—the great tower of the University (1914-25), and it is likewise certain that this latter-day outcrop of the Revival achieves architectonic success of a kind we are not likely to see repeated, though we may well desire it.

'As an architect Sir George had the faculty which we associate with the generation of John Francis Bentley—the faculty of entering into a style and for conceiving the whole in its exact terms.

'The extent of his practice is already almost a matter for legend, and all his work has a quality which, by reason of tumultuous events, is even now becoming noticeable.'

Sir Leslie Scott [*Hon. A*]. The Right Hon. Sir Leslie Scott, whose death in a nursing home at Oxford occurred on 19 May, was a member of the Court of Appeal from 1935 until October 1948. He was best known to architects and planners as chairman of the 'Scott Committee' or, to give its full title, 'The Committee on Land Utilization in Rural Areas'.

The eldest son of the late Sir John Scott, K.C.M.G., Scott was educated at Rugby and New College, Oxford, and he was called to the Bar in 1894 and soon acquired a large practice in commercial cases both at Liverpool and in London. He had a great power of marshalling complicated facts, and the thoroughness with which he prepared his cases gave satisfaction both to professional confrères and lay clients. Of mining and land subsidence he had a practical knowledge, and he was much in request in such cases. A man of great public spirit, he always made time for a quantity of unpaid work, however busy he was, and during the strenuous years of war and reconstruction he was chairman of the Agricultural Organization Society in 1917 and of the Acquisition of Land Committee the same year, whose reports produced the Acquisition of Land (Compensation) Act, 1919, the Law of Property Act, 1922 (in this connection among his earlier pupils was Lord Birkenhead), and the Mines (Working Facilities) Act, 1923.

Always interested in helping to preserve the beauties and amenities of the countryside, Scott was an active member of the Council for the Preservation of Rural England. In the subject of the preservation of the beauties of England, architectural as well as scenic, his interest never failed. He married in 1898, and there was no issue of this marriage.

Sir George L. Pepler, C.B., P.T.P.I., F.R.I.C.S. [*Hon. A*], writes:

'The passing of Sir Leslie at the ripe age of 80 years leaves the world poorer by the loss of an eminent lawyer, notable statesman and great gentleman. In the field of law he rose to the position of a member of the Court of Appeal. As a statesman he occupied the post of Solicitor General, and earlier had made a notable indirect contribution to Town and Country Planning by the large share he took in framing the report that led to the passing of the Acquisition of Land (Compensation) Act, 1919. Other activities in relation to planning included the chairmanship of one of the Committees that considered the fate of Charing Cross Bridge. His most notable contribution, however, was as chairman of the Committee on Land Utilization in Rural Areas which reported in 1942, and is known to all as the Scott Committee, one of the famous trilogy: Barlow, Scott, Uthwatt, whose reports had such a marked influence on post-war legislation and practice in the field of Town and Country Planning.

'Sir Leslie's ruling passion was the preservation of rural England, with its lovely country towns and villages. For this he worked unceasingly both as an active member of C.P.R.E., and as chairman of one of its County branches, and the same passion permeates the report of his Committee. He also wrote frequent letters to the Press, drawing attention to encroachments, threatened or in process, on the beauty of the countryside. One might not always agree with his views, but one could not but admire his passionate sincerity of purpose. Rural England has lost a great and devoted champion and we mourn his passing.'

Frederick G. Limmer. The late Frederick G. Limmer, who died on the 24 March last was a Fellow, R.I.B.A., but resigned in December last. He had served the Norfolk County Education Committee for the past 44 years, and during that period many schools in the county were built to his designs.

Shortly before the war the plans of the school at Old Buckenham, designed by him, were selected by the Ministry of Education to illustrate a modern rural school at a conference of H.M. Inspectors, whilst photographs of the Hellesdon Modern Secondary School appeared in the Dutch architectural journals as an example of modern English school building. Mr. Limmer was articled to the late A. J. Lacey, of Norwich, and, for a time, held an appointment in Chesterfield prior to returning to Norfolk in 1905.

A man of quiet and pleasing personality, he had been in poor health since he resigned in March last year and it was most unfortunate that he was not able to enjoy a long and happy retirement after his many years of service.

John Bevan [*Retd. F*], of Bristol, who died six months ago, designed the Church of the Holy Cross, Bedminster, Bristol; Corpus Christi Church, Weston-super-Mare, and restored and rebuilt St. Brendan's College, Bristol, and the Franciscan Friary at Clevedon, Somerset. He retired in 1939.

Alfred Henry Barnes [*F*] was for very many years a member of the Science Standing Committee and the Architectural Science Board, and a representative of the Royal Institute on the Parliamentary and Scientific Committee. He had also represented the Royal Institute on the Building Divisional Council of the British Standards Institution, and on more than thirty committees of the B.S.I.

Mr. Barnes was born in 1874, and was trained in the office of Mr. C. W. Bevis [*F*], of Southsea, commencing personal practice in the Croydon, Purley and Coulsdon area about 1906. In this area he was the architect of numerous private dwellings and of a warehouse for Messrs. Days. He was the author of some articles on building bye-laws and kindred subjects in THE BUILDER and BUILDING.

His death occurred on 3 April 1950.

Benjamin Chaikin [*F*], who died on 23 April last, aged 66, was senior partner in the architectural firm of B. Chaikin and E. Nesher, of Jerusalem. Trained at the A.A., he practised in London until the first World War, and had been in practice in Jerusalem since 1920.

Mr. Chaikin was the architect of health centres, university and municipal buildings, hospitals, post offices, libraries, hotels and institutes in Palestine, and specialized in quantity surveying and land valuation.

Notes from the Minutes of the Council

MEETING HELD 2 MAY 1950

Appointments

(A) International Association of Bridge and Structural Engineers: Congress 1952: R.I.B.A. Representative: Mr. Graham Dawbarn [*F*].

(B) R.I.B.A. Codes of Practice Committees: Code Committee for Code 310: Water Supply, and Drafting Committee B: Mr. Denzil Nield [*A*] in place of the late Mr. A. H. Barnes [*F*].

(C) Public Works and Municipal Services Congress and Exhibition: Olympia, London, 13-18 November 1950: Chairman for Session sponsored by R.I.B.A.: Mr. C. H. Aslin (Vice-President).

R.I.B.A. Distinction in Town Planning: The Council conferred the Distinction in Town Planning upon Mr. Thomas E. North [*F*].

Revised Code of Professional Practice: As desired by the Council, the Practice and Salaried and Official Architects' Committee have carried out a complete revision of the Code of Professional Practice. The revised Code was approved by the Council, and will in future be known as the Code of Professional Conduct. The new Code is being printed, and copies will be distributed to every member and Student with the July JOURNAL.

Nomination List for Council Election: The Secretary reported that Mr. John Needham [*F*] was unable to accept the Council's nomination for election.

Revision of the Bye-laws: The Council approved the recommendations of the subcommittee which had been convened to submit proposals for revision of the Bye-laws with a view to bringing various provisions up to date. In accordance with the provisions of Clause

VIII of the Charter of 1887, the proposed revisions will be submitted to the General Body of members at General Meetings for approval and confirmation.

Festival of Music and the Arts, Aldeburgh, 1950: On the recommendation of the Library Committee the Council approved a request from the Aldeburgh Festival Council for the loan of six Cotman drawings from the Institute's collection for exhibition during the Aldeburgh Festival.

Membership: The following members were elected: as Fellows, 7; as Associates, 6; as Licentiate, 1. Students: 52 Probationers were elected as Students.

Election as Licentiate under the provisions of the Supplemental Charter of 1925, Clause 3 (f) Wilfred John Sirrell.

Applications for Election: Applications for election were approved as follows: *Election 20 June* 1950: as Fellows, 5; as Associates, 109. *Election October* 1950 (*Overseas Candidates*): as Associates, 23.

Applications for Reinstatement: The following applications were approved: Robert Stanley de Burgh, Sidney James Kemp, Robert Percival Sterling Twizzell, and Gordon Kenneth Moss (as from 17 June 1950).

Resignations: The following resignations were accepted with regret: James Constable Leed [*Retd. F*], Arnold Silcock [*Retd. F*].

Obituary: The Secretary reported with regret the death of the following members: Werner Pfister [*H.C.M.*], Alfred Henry Barnes [*F*], Benjamin Chaikin [*F*], William Lionel Eves [*F*], William John McWilliams [*F*], Robert Henry Jewers Mayhew [*F*], Pascal Joseph Stienlet [*F*], Morris Thompson [*F*], John Bevan [*Retd. F*], Llewellyn Hiley Harris [*A*], Percy Pithie Henderson [*A*], William John Bowen [*L*], Glyn Thomas Lewis [*L*], Robert William Sampson [*L*].

Members' Column

This column is reserved for notices of changes of address, partnership and partnerships vacant or wanted, practices for sale or wanted, office accommodation, and personal notices other than for posts wanted as salaried assistants for which the Institute's Employment Register is maintained.

APPOINTMENTS

Mr. T. A. L. Concannon, F.S.A., A.M.T.P.I. [*F*], Colonial Service, has been transferred to Malaya as Government Town Planner, where his address will be Town Planning Department, P.O.B., 1049 Kuala Lumpur, Malaya.

Mr. A. M. Edwards [*A*] has been appointed East Herts. Assistant Divisional Planning Officer. His new address is East Herts. Divisional Planning Office, Bayley Hall, Queens Road, Hertford, Herts.

Mr. L. A. J. Heywood [*A*] has from 5 June been appointed Deputy City Architect of Bradford. He was formerly Chief Assistant Architect (Public Buildings), City of Leeds Corporation. Communications should now be addressed to him Deputy City Architect, Town Hall, Bradford.

Mr. R. Forbes Hutchison [*A*] is now Chief Architect to the South-Eastern Regional Hospital Board, Scotland. Communications should be addressed to him at Chief Architect's Department, 6 Cambridge Street, Edinburgh, 1.

Mr. Lister P. Rees [*A*] has been appointed Chief Technical Adviser to the War Damage Commission, Devonshire House, Mayfair Place, London, W.1.

PRACTICES AND PARTNERSHIPS

The firm of **W. H. Ansell and Arthur Bailey** [*P/P, F*], of 5 Verulam Buildings, Gray's Inn, London, W.C.1, has been dissolved by mutual consent as from 30 April 1950. The practice will be continued by **Mr. Arthur Bailey,** O.B.E. [*F*], under the style of **Ansell and Bailey. Mr. Ansell** will continue to be associated with the practice as consultant.

Mr. Geo. Talbot Brown [*F*], practising as **Geo. T. Brown and Son,** has taken into partnership **Mr. Neil McLeod Robertson** [*A*]. The practice will continue under the style of **Geo. T. Brown and Son** as before from Barclays Bank Chambers, 53 Fawcett Street, Sunderland (Sunderland 4778).

Messrs. Cobb, Archer and Scammell [*F/F*], P.O. Box 58, Nairobi, Kenya, have formed a new practice in Tanganyika Territory, and have taken into partnership **Mr. J. L. Lambert,** A.R.A.I.A. The firm will be styled **Cobb, Archer, Scammell and Lambert.** Head Office is at Lindi (P.O. Box 58), with Branch Office at Nachingwea (P.O. Box 7).

Mr. S. Nelson Hewitt [*A*] has commenced practice at 25 Sidwell Street, Exeter (temporary telephone number Exeter 2910). He will be pleased to receive trade catalogues, etc.

Mr. Herbert Kenchington [*F*] and **Mr. Kenneth** and **Miss Margaret Farms** [*A/A*] are entering into partnership with **Mr. Denzil Nield** [*A*], and the firms of **Kenchington and Farms** and **G. E. Nield and Son** are being amalgamated. The new partnership will be under the name of **Kenchington, Farms and Nield,** and will be carried on at 130 Crawford Street, London, W.1 (WELbeck 6543). The partnership between **Mr. Denzil Nield** [*A*] and **Mr. Peter Goodridge** [*A*] and **Miss Elizabeth Foster** has been dissolved by mutual consent on Mr. Nield giving up his appointment at the A.A. School of Architecture.

Mr. John M. Slater [*A*] has been taken into partnership by **Mr. Mark Jennings,** M.I.Mech.E. The partnership will be carried on under the name of **Mark Jennings, Son and Partners,** Consulting Engineers and Architects, at 116 Victoria Street, Westminster, London, S.W.1 (VICtoria 2051).

Mr. Brian S. Tait, A.R.A.I.A. [*A*] has commenced practice at The Quay, Gloucester (Gloucester 20884), and will be pleased to receive trade catalogues etc.

Mr. W. J. Tremlow [*A*], having resigned his position as Chief Architect to ISCOR (South African Iron and Steel Corp.), Group Housing Organization, has commenced private practice at 412 Trevor Buildings, Vereeniging, Transvaal, South Africa. He will be pleased to receive trade catalogues etc.

CHANGES OF ADDRESS

Mr. L. Edward Billson [*L*] has transferred his office from 276 Duffield Road, Derby, to 12B Stafford Street, Derby, and will be pleased to receive trade catalogues etc. The telephone number, Derby 57347, remains unchanged.

Messrs. W. A. Forsyth and Partners (Mr. W. A. Forsyth [*F*], **Mr. L. R. Foreman** [*A*] and **Mr. E. C. Butler** [*L*]) have moved their offices from Avon House, 366 Oxford Street, London, W.1, to 47 Nottingham Place, London, W.1 (WELbeck 3259).

Mr. Gerald G. Pembery [*A*] has removed from 153 Wolsey Drive, Kingston, Surrey, to 57 Effingham Road, Long Ditton, Surrey.

Harry and **Elizabeth Speakman,** A.M.T.P.I. [*A/A*] have moved their office to Court Place, Guernsey, C.I., and will be pleased to receive trade catalogues etc.

Mr. H. A. F. Spooner [*L*] has removed from 15 Curzon Street, London, W.1, to 10 Fleet Street, London, E.C.4 (CITy 4400).

Mr. Robert Brodie Thomson, M.A. [*A*], has removed from Largs, Ayrshire, to No. 4 'Torwoodhill', Rhu, Dunbartonshire.

ACCOMMODATION

Two Fellows sharing good offices in the Adelphi area have room available for third man. Lighting, heating, telephone, and possible use of Assistant. Terms to be agreed. Box 30, c/o Secretary, R.I.B.A.

PRACTICES AND PARTNERSHIPS WANTED AND AVAILABLE

Fellow practising in London would consider working arrangement with busy architect or joining active group practice. Box 32, c/o Secretary, R.I.B.A.

Two Associates required for two rural practices in South West England. Early partnerships offered after probationary period. Box 33, c/o Secretary, R.I.B.A.

Associate with own City office wishes to acquire small London practice of retiring member, outright purchase or sharing of fees. Box 35, c/o Secretary, R.I.B.A.

Associate with 16 years' practical experience seeks partnership in old-established practice in West Midlands, preferably Worcestershire. Box 29, c/o Secretary, R.I.B.A.

Member with provincial office and staff, having very extensive and old-established connection (including London), desires partnership in London or willing to take over an entire practice by arrangement. Any requisite capital available. Principals only, and all replies in strict confidence. Box 34, c/o Secretary, R.I.B.A.

FOR SALE

For Sale. Small drawing board, 16 in. by 23 in. £1 5*s.* 0*d.* Solid oak flat-top office desk, 2 ft. 9 in. by 4 ft. 0 in., 6 drawers, 1 file drawer and flap £25. Both in excellent condition. Box 36, c/o Secretary, R.I.B.A.

Member, West Riding of Yorkshire (retiring), has contents of architect's offices for disposal. Plan chests, boards and all equipment necessary for carrying out a good practice. Box 31, c/o Secretary, R.I.B.A.

R.I.B.A.
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& ACCIDENT POLICY

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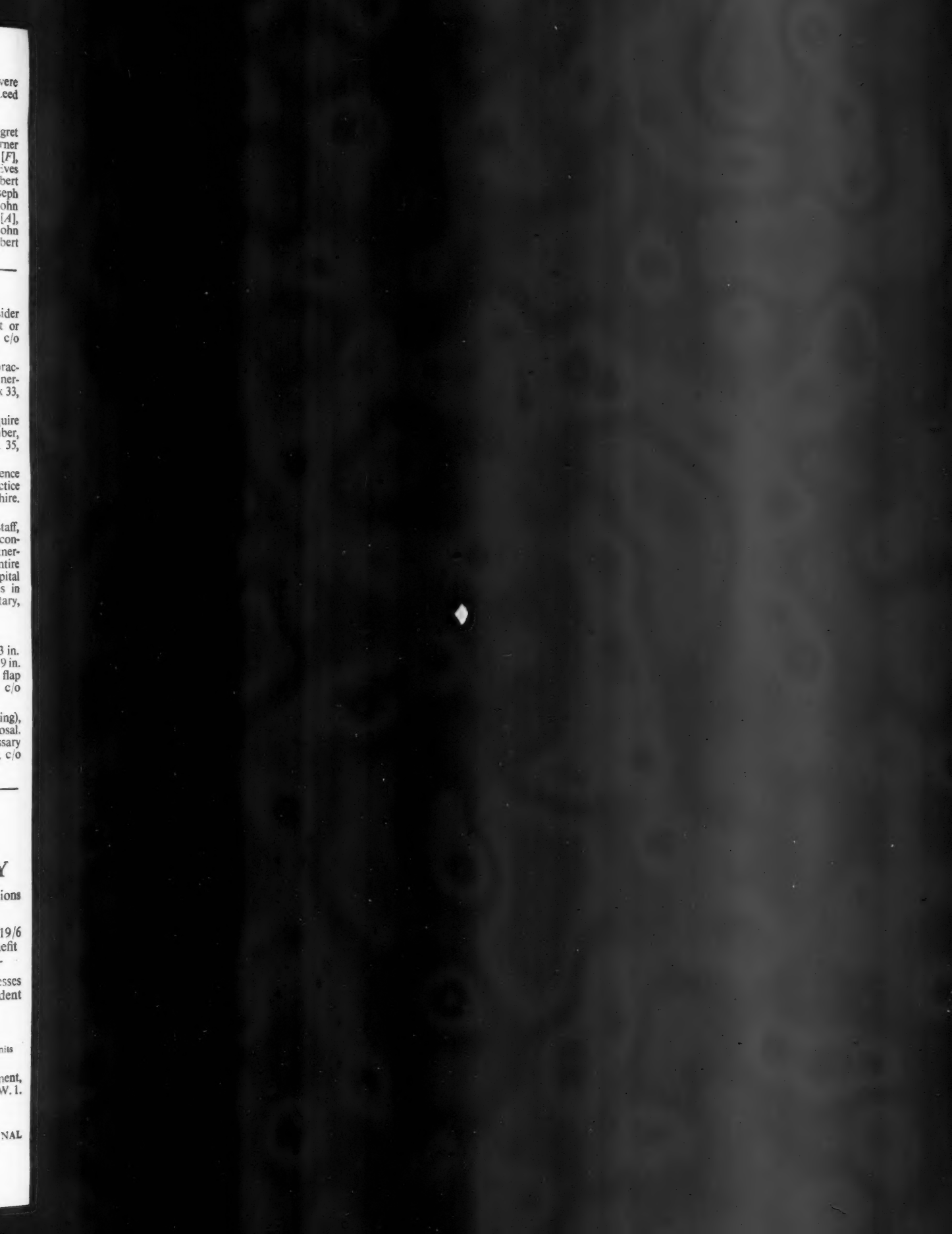
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